

2017



# Affordable Homes and Sustainable Livelihoods in Rural Wales

## Feasibility of a resilient neighbourhood at Llandovery

The Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 require the population to live and work in radically different, environmentally sensitive ways. This investigation considers the potential for new settlement to fit the progressive legislative framework. The study area centres on Llandovery in the upper Tywi valley of Carmarthenshire, a town on the Heart of Wales railway, but is hoped to have relevance for other areas of rural Wales.

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# Executive Summary

- **RECOMMENDATION 1:** Calon Cymru Network should form two community land trusts, (a) an umbrella trust for the Heart of Wales railway corridor and (b) an initial local trust for the Llandovery area, in collaboration with the Heart of Wales Line Development Company. The trusts should be community benefit societies, which can raise capital through community share issues (section 7). Calon Cymru Network and Heart of Wales Line Development Company can do this.
- **RECOMMENDATION 2:** Local authorities and partner not-for-profit community organisations should be able to compulsorily purchase land for affordable housing, where there is clear evidence of need, at less than development value. The price ceiling for compulsory purchase of land for development could be reduced, probably in stages, to agricultural value plus half the difference between that figure and full development value. On Rural Exception sites outside development boundaries, a lower ceiling could apply. This change would share the financial gain between the landowner and the community (section 4.4). Change of compulsory purchase regulations in Wales is now problematic. The devolution settlement was silent on the matter, but the Wales Act 2017 reserves most compulsory purchase powers to the UK Government in Westminster.
- **RECOMMENDATION 3:** Local authorities should develop a more systematic, clearly understood process for community asset transfers of land (sections 2.5.3-2.5.4). Carmarthenshire County Council and other local authorities have the main role.
- **RECOMMENDATION 4:** A Community Right to Build policy should be introduced into Wales, and be included as a permitted category of rural development (section 4.4). The Welsh Government would determine this because housing is a devolved matter.
- **RECOMMENDATION 5:** Policies should also restrict developers' land banking by
  - **Limiting applications to renew expired planning permissions** (section 4.4). This might be achieved by local planning authorities and the Welsh Government together.
  - **Exempting community land trusts from leasehold enfranchisement and from bans on leasehold sales** (section 5.5.2). The Welsh Government could develop policy for this.
- **RECOMMENDATION 6:** Agricultural colleges should consider expansion of the range and depth of courses in fruit and vegetable production, including organic methods; in agroforestry and permaculture, and promotion of these courses within their catchment areas (sections 2.6.2,

6.3.1). Individual colleges would need to be convinced of the benefits of doing this, but there are strong arguments in favour, including Wales' very low (about 5%) food security in fruit and vegetables, achievement of shorter supply chains between producers and consumers, and knowledge exchange between established farming communities and newcomers.

## **Introduction**

Criteria informing Calon Cymru Network's search for sustainable regeneration opportunities are:

- Provision of homes for local people to rent and sites for self-builders to buy. It is generally impossible to construct affordable homes to rent without subsidy, whether from government, or philanthropists, or both (see especially 9.2, 11.3.4 ).
- Homes to be constructed of locally sourced materials and designed to have energy performance certificates rated A.
- Renewable energy on site.
- Homes to have office work space, fast broadband capability, and electric vehicle charging point.
- Location within one mile of public transport, so that fewer residents feel obliged to have a private vehicle.
- Sites to have garden space, and/or allotments/ orchard for small-scale fruit and vegetable production, with surpluses contributing to ventures such as Black Mountain Food Hub's 'patchwork farm', or for direct sale locally. This would not be formal One Planet Development but would accord with the spirit of the Well-being of Future Generations (Wales) Act and the Environment (Wales) Act.

The process of investigation led to a shift in emphasis from the initial idea of an edge-of-settlement neighbourhood complying with the Welsh Government's 'One Planet Development' regulations, to a wider concept incorporating elements of the One Planet protocol, as appropriate for each site.

## **Section 1 The Rationale for the Project**

The Well-being of Future Generations (Wales) Act 2015 requires public bodies to think in a more sustainable and long-term way.

The Environment (Wales) Act 2016 sets specific and tough limits for greenhouse gas emissions. The Welsh Government must ensure that the net Welsh emissions for the year 2050 are at least 80% lower than the baseline (1990 or 1995 depending on the

gas). Wales is lagging behind other UK nations except Northern Ireland in its efforts to reduce emissions.

The Planning (Wales) Act 2015 introduces a new legal framework for the Welsh Ministers to prepare a national land use plan, to be known as the National Development Framework for Wales. The framework will set out national land use priorities and infrastructure requirements for Wales.

Looking to the future, Calon Cymru Network's task included initiating development near Llandovery to accord with these criteria:

- Contribute to the Welsh Government's target, explicit in the Environment (Wales) Act 2016, of reducing greenhouse gas emissions by 80% before 2050.
- Meet the seven goals that the Well-being of Future Generations (Wales) Act 2015 requires.
- Echo the 'One Planet' concept detailed in One Wales: One Planet – the sustainable development scheme of the Welsh Government, published in 2009 and the associated guidance in 2010's Technical Advice Note 6, Planning for Sustainable Rural Communities.

## **Section 2 Six Frames**

(1) Climate change, soil degradation, uncertain water and fossil energy availability, and fluctuating food supplies demand local action to maximise resilience. This means having the capacity and skills to achieve higher levels of self-sufficiency and to replace non-renewable resources with renewable ones. The 'sustainable neighbourhood' rationale accords with these imperatives.

(2) Brexit will have profound implications for the future of the UK by stopping the flow of European Union structural funds to poor regions such West Wales and of agricultural subsidies to the whole nation. A 'hard Brexit' would be highly detrimental to Wales's farmers, some of whom would almost certainly decide to exit their businesses, despite the fiscal benefits of owning farmland. This could decrease the price of land and thus create opportunities for new enterprises including One Planet Developments, which are unsubsidised and geared far more to agroforestry and horticulture and to businesses adding value to produce, than to grass-based livestock farming. If land prices declined, sites would be more affordable for settlement-edge Rural Exception dwellings. Social enterprises like Calon Cymru Network could assume larger roles in creating employment and in keeping money circulating within the region. A big downside to be addressed would be financial stress for established farming communities.

(3) and (4) The General Election on June 8 2017 resulted in a Conservative minority administration depending on Northern Ireland's Democratic Unionist Party. The

Fixed-term Parliaments Act 2011, establishing five-year gaps between elections, was bypassed, and could be again before 2022. Short-term considerations are likely to dominate to the detriment of long-term environmental and climatic priorities. In what could well be a policy vacuum, Calon Cymru Network's role is to press ahead with plans for the low-impact revitalisation of the Heart of Wales line corridor.

(5) and (6) Carmarthenshire County Council has experience of One Planet applications, and owns suitable land within easy walking distance of public transport. Best value rules at this time of financial cutbacks mean that the county council could perhaps not sanction a cheap land disposal for a One Planet Development, but a Rural Exception Site for affordable homes is a different matter and negotiation with the county council for community asset transfer of a portion of its land should have a greater chance of success. To this end, **a clearly understood protocol for community asset transfers would be helpful.**

New residents keen to live according to One Planet principles are likely to be young and energetic, creating economic opportunities for themselves and in time for other people. They would contribute to rebalancing the demographic profile and to the creation of a more diverse economic base.

The project would need to be sensitive to the rural culture and linguistic heritage of the area. **One way to help bridge the gap between incoming One Planet Development enthusiasts and the established farming community would be for agricultural colleges to increase courses in commercial horticulture and agroforestry, and to promote these courses within their catchment areas.**

Homes on one or more Rural Exception Sites would be for local people, enabling them to stay in their home area. It would be part of the plan to accompany housing with community food production and access to small business units – sustainable livelihoods as well as affordable homes.

### **Section 3 The Land Conundrum**

Land adjacent to settlement limits has potential, as Rural Exception Sites, to be designated for affordable housing. The problem here is that landowners expect full development value if their site is to be used for housing, affordable or not, unless they are inclined to be philanthropic.

Farmland owners can qualify for valuable exemptions from Inheritance Tax and, by reinvesting sale proceeds, from Capital Gains Tax. These exemptions, the fact that land supply is fixed, and the UK's relatively stable political and legal environments, encourage not only farmers but investors from all over the world to shelter capital in UK farmland.

Savills' UK Agricultural Land Market Survey 2016 reports: "Cash, in almost 80% of transactions, remains the predominant source of purchasing funds. This includes rollover proceeds, which was the source of funds used by 7% of buyers... Farmers made up the smallest proportion of buyers since 2003 – at 43% of all transactions. Meanwhile, non-farmers including lifestyle buyers, investors and institutional/corporate buyers represented the biggest percentage of purchasers in the past 12 years."

The utility of land as collateral, apart from its use value, means that owners seek to apply political and legal power to protect their possession.

The subsidy system, added to the other advantages of owning farmland, discourages landowners from parting with it even for socially desirable purposes.

The Myers case of 1974 had a substantial influence on land costs. The judgement in Myers versus Milton Keynes Development Corporation, made by Lord Denning, Master of the Rolls, was instrumental in making compulsory purchase far more expensive and protracted. He ruled that landowners had a right to share in the increase in land value post-development. This marked the end of the post-war era of well-built social housing on generous plots, often acquired through compulsory purchase at agricultural value.

Given the minimal cost of holding the asset, many landowners are happy to retain land over the long term, even if they have no particular use for it. It is for this reason that some economists favour an annual land value tax, but the potential drawbacks are significant and include the difficulties of valuing land (and not structures on it), and keeping valuations up to date; the plight of income-poor people who happen to own land but cannot find a buyer for it; and the ever-present problem of exemptions.

## **Section 4 Increasing the Supply of Affordable Rural Homes**

Policy changes worth considering to increase the supply of rural homes include:

- \* **Introducing a Community Right to Build policy in Wales.**
- \* **Strengthening compulsory purchase regulations** to reduce the value uplift passed to landowners until the uplift is shared equally between landowner and public authority (although this would be unpopular with the landowners affected). Local authorities and partner not-for-profit community organisations would be the beneficiaries.
- \* **Restrict renewal of planning permission on land which has not been developed although it has the necessary permission.**
- \* Planning policy alterations to
  - increase solar energy capture
  - incorporate more green open space in housing developments
  - promote orchards, allotments and wild planting within developments
  - include more live-work homes in new neighbourhoods.

- Exempting sales of land for Rural Exception housing from liabilities for taxation.

Several promising designs of low-cost, low-impact homes are now available. They include Western Solar's Ty Solar, with a factory in Pembrokeshire. Founder Glen Peters raised the initial investment from income from the solar farm on his property, and he is working to persuade housing associations and local authorities to adopt his designs.

Mark Waghorn Design offers caravan-footprint and live/work dwellings, made of local timber and thereby supporting forestry enterprise. These designs could help meet the demand for small homes in the Llandovery area.

Nick Dummer's Morphut design is also low-carbon in construction and use. It uses local materials and could be deployed as affordable housing without public subsidy.

Pioneering developments of affordable and intermediate-market homes in England have benefited from public subsidies. They include the Low Impact Living Affordable Community (LILAC) in Leeds, with straw-bale homes. The financial model for the LILAC mutual home ownership society is complex and has required considerable professional expertise. The community aspects of living at LILAC, including food-growing area, are valued by residents.

In Leicester, the Saffron Lane Estate is an imaginative use of disused land, supported financially by both local and national government. In Lewisham, London, the Rural Urban Synthesis Society (RUSS) has attracted substantial grants. Tigh Grian homes in Scotland, built to the Scottish 'Gold Standard' of sustainability, also need public subsidy to be accessible as affordable dwellings.

The Dutch bank Triodos and the Ecology Building Society both have critical roles in supporting the development of innovative, affordable, low-impact homes. The main UK banks have shown little interest.

## **Section 5 Obstacles and Challenges**

Tension between regulation and affordability cannot be avoided, but low impact developments can be destroyed at inception if regulations for building, infrastructure, water supply and other essentials are applied too zealously. Some experimental leeway would help broaden the range of construction methods available, to self-builders initially for example, so that the benefits and drawbacks can be assessed over time and, if appropriate, the regulations could be amended. There is a case for developing sub-sets of regulations for low-impact projects.

Issues over unfair clauses in leasehold agreements are prompting the Westminster government to consider banning leasehold sales of new houses in England, in favour of freehold. It is possible that Wales could do the same. While price control over future sale decisions can be specified in leases, it is harder to guarantee that

freehold properties remain affordable over the long term. Therefore, affordable homes are increasingly likely to be rented.

Mutual societies are sometimes promoted as a promising way forward for affordable housing. This may be the case, but when conflicts arise they can be serious, and highlight the need for painstaking attention to legal structures.

## **Section 6 Future Benefits**

The intention to include work spaces in affordable homes stems from Calon Cymru Network's wish to reduce emissions from commuting transport. Western Solar in Pembrokeshire, for example, incorporates space for home office work in its Ty Solar houses. High-speed broadband is essential, and in reach at Llandovery where the exchange is fibre-enabled.

A sustainable neighbourhood at Llandovery could be accompanied by a permanent display, possibly in one of the town's empty shops, or by a section in the town museum, if it should move to larger premises. Training courses and demonstrations could be organised from a permanent venue. These ventures would add to the numbers of visitors coming to Llandovery, and could help extend the season by taking place throughout the year.

If Coleg Sir Gar and agricultural colleges throughout Wales developed and promoted their range of horticultural and agroforestry courses, these actions would raise the profile of horticulture among the farming community, and enable established and new participants in land-based industries to meet.

New housing for local young people and families could trigger ancillary enterprises in construction, renewable energy, food processing, education and training and tourism, for example.

The lived experience of residents in a sustainable neighbourhood would indicate its replicability to other locations, although every location is unique. Welsh legislation, and expected climate change, require deep systemic reductions in the resources people consume, and therefore a sustainable neighbourhood has the potential to be a 'blueprint' for changes elsewhere.

## **Section 7 New Organisations: Community Land Trusts**

**The report proposes that Calon Cymru Network initiate two new community land trusts (CLTs): an umbrella trust for the Heart of Wales railway corridor, and a local trust for the Llandovery area.**

A CLT may choose to register as a charity if its aims accord with permitted charitable activities. Charities can attract donations and grants as well as loans, and the tax benefits are significant. On the other hand, regulation is heavy and a CLT must be able to prove how it is meeting its charitable aims. Once an organisation has



registered as a charity, it cannot normally revoke that status. Trading is very restricted and must accord with the CLT's aims. For example, a CLT cannot build and sell dwellings on the open market, to fund affordable housing. It would have to set up a separate non-charitable venture and organise for profits to be paid to the CLT.

The Welsh Government could help to develop CLTs by:

- Access to revenue start-up support through the Wales Co-operative Centre.
- Investment and strategic support for a revolving loan fund for co-operative/ community-led housing projects in Wales.
- Policy guidance and support to help local authorities use innovative approaches for developing affordable housing on Rural Exception Sites.
- Assisting dialogue between prospective community-led housing schemes and potential local authority/ housing association partners.

It is important to build community participation in a land trust, to be patient, and pay attention to marketing to keep the organisation in the public eye. The skill of working with other individuals and organisations has to be developed, because a community land trust needs support from landowners, planners, funders and builders, as well as from the local population.

## **Section 8 Partnership Working**

The Welsh Government has identified skills gaps in what are called 'citizen-led' schemes. The expertise gaps tend to be in finance, land acquisition – and in securing partners to work with.

Once a CLT is formed, it can bring a new dimension to low-cost housing by treating homes as one element of a sustainable, resilient community, alongside other partners in construction, energy and food production, public transport and job creation, all in the context of environmental protection and climate change mitigation.

## **Section 9 Recommendations on Likely Viability**

The first proposal is to establish an umbrella community land trust for the Heart of Wales railway corridor, and a local trust for the Llandovery area, initially to acquire land for components of a 'sustainable neighbourhood' in the Tywi valley near Llandovery. The trust should be registered as a community benefit society.

At Dolau Fields, Llandovery, there is scope for 12 affordable eco-homes with solar energy generation and community food growing area. Timescale: 2 – 4 years.

At Llanwrda, 6-8 affordable eco homes could be constructed on the charity-owned school site. The charity also owns a listed building which contains 6 flats, one of which is occupied by the caretaker. The other flats are unfit for habitation and could

not be brought up to current standards. The building could instead provide workspace and a community food growing area. Timescale: 4 – 6 years.

There is also a possible larger scale development at Llandovery, incorporating One Planet enterprises and Rural Exception affordable eco housing, with the goal of boosting the local economy through status as a demonstration project of regional significance, leading to work opportunities in education and training, as well as in land-based enterprises. Timescale: 6 – 10 years.

One Planet Development homes are not necessarily ‘affordable’, meaning they are not an obvious choice for Llandovery households with median and below-median incomes (see 2.6.1). Although OPD homes can be self-built for £10,000 to £50,000, this does not make them affordable housing. Self-builders use their own and unpaid volunteer labour, which if accounted for would raise the costs of homes. Self-builders often come with considerable financial resources and rarely appear to be driven by acute housing need. Wales’ One Planet policy, which is not replicated in England, has encouraged OPD proponents to come to rural Wales from England. While this is a continuation of a trend over five decades, it has cultural implications which need to be considered in Welsh Government policies.

## **Section 10 Concise Business Plan**

A public meeting in Llandovery on April 20 2017 revealed concern about keeping homes affordable, enabling young people to remain in the area, and providing good jobs. There was less interest in One Planet Developments, which are not yet a familiar concept to the general public.

Probably the most important task facing Calon Cymru, after establishing a local community land trust and an umbrella community trust, is to develop partnerships with organisations and individuals who can work together to assist communities prepare for the future, in accordance with the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.

### **One year**

1. To found a local community land trust, with one trustee from Calon Cymru Network, one from Heart of Wales Line Development Company, and others from the Llandovery / Cilycwm / Llanwrda area.
2. To collaborate with the Heart of Wales Line Development Company in setting up an umbrella community land trust for the line corridor.
3. The community land trusts will decide their own priorities.
4. Calon Cymru Network will suggest to the local-area community land trust the construction of 12 low-cost but highly energy efficient homes at the Dolau Fields site, Llandovery. The site has planning permission, which would need to be amended. Price negotiations have not officially started.

5. Calon Cymru Network will support the trustees of the Almshouse Charity of Letitia Cornwallis, if they so wish, in arranging the construction of six to eight energy-generating homes with community orchard/ vegetable garden on the primary school site, and also to gain permission to change the use of the listed building from residential to B1 (business) and D1 (including museums/galleries) and to secure funding to renovate it accordingly.

### **Two to five years**

1. To prepare proposals to put to Carmarthenshire County Council for a demonstration low-impact eco-hamlet with One Planet Development smallholdings, live/work homes and an education building on a portion of council-owned farmland close to Llandovery. This land is not currently available, and might remain unavailable for several years.
2. To monitor the availability of other potential sites for energy self-sufficient, EPC<sup>1</sup> A+-rated live/work homes, ideally with food production space. Possible sites include (a) opposite the former Ysgol Gyfun Pantycelyn, owned by Carmarthenshire County Council, and (b) Maes y Felin, privately owned. Both feature on the reservoir flood risk map, which is likely to increase the cost of insurance. The site opposite the closed school is likely to have archaeological restrictions.

### **At the end of five to seven years**

1. To have assisted the proposed local community land trust in the creation of affordable energy-generating homes.
2. To have suggested, to this community land trust, development of at least 18 affordable eco-homes, at least six of which are live/ work homes; two food growing areas, workshop space and a historical interpretation centre.
3. Through the umbrella community land trust, to have helped the formation of at least two other local CLTs in the corridor area.
4. To have assisted One Planet Development applicants to secure suitable freehold land within five miles, and ideally within two miles, of the Heart of Wales railway.
5. To have campaigned successfully for changes in land taxation rules and compulsory purchase regulations, to lower the costs of land acquisition by public authorities and social enterprises, and to reduce the fiscal incentives which privilege land as an investment.

## **Section 11 Financial Projections**

The estimated cost of setting up an umbrella community land trust and the first local community land trust is about £8,275, if the directors and members of Calon Cymru Network continue to provide voluntary professional support.

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<sup>1</sup> EPC stands for Energy Performance Certificate.

<sup>2</sup> It is entirely possible that council-owned land could be available at other locations, but Llandovery was the designated location for this study.

The project for 12 affordable eco-homes at Dolau Fields has a ball-park cost of £1.5 million including land. This could be reduced to £1.1 million - £1.2 million if novel designs could be employed. It is only at this lower level that the task of a community land trust to raise the necessary funds looks practicable.

The housing waiting list for Llandovery area in 2017, household income data for Llandovery ward, and responses at the April public meeting, suggest that the primary need is for rented social housing, and therefore the most appropriate way for a community land trust to tackle this at Dolau Fields could be to seek a Social Housing Grant for a mix of 12 new-design low-impact homes, and to match fund through a community share issue, with interest payments set at about 3.5%.

Calon Cymru Network aims to assist the trustees of the Almshouse Charity of Letitia Cornwallis, if they so wish, in arranging the construction of six to eight energy-generating homes with community orchard/ vegetable garden on the site of the former Llanwrda primary school, and also to gain permission to change the use of the adjacent listed building, Cornwallis House, from residential to B1 (business) and D1 (including museums/galleries) and to secure funding to renovate it accordingly.

# Headlines

## Affordable Rural Homes – for local people priced out of the housing market

- When average wages are too low for families to afford a home, poverty is structural and alleviation requires significant policy changes, to reduce the costs of new homes as well as to rebalance wage bills in favour of the lower paid (3.1). Community land trusts -- non-for-profit organisations dedicated to providing homes and workspaces at below open market value -- contribute to bridging the gap between local incomes and housing costs (Section 7).

**RECOMMENDATION 1: Calon Cymru Network should form two community land trusts, (a) an umbrella trust for the Heart of Wales railway corridor and (b) an initial local trust for the Llandovery area, in collaboration with the Heart of Wales Line Development Company. The trusts should be community benefit societies, with capacity to raise share capital.** Calon Cymru Network and Heart of Wales Line Development Company can do this.

- Architect members of Calon Cymru Network are designing low-cost environment-respecting homes costing from 10% to 50% less than conventional new builds (4.7.4-4.7.6). Even if these lower-cost homes are widely adopted, policy changes to restrict land prices will also be needed.

**RECOMMENDATION 2: Local authorities and partner not-for-profit community organisations should be able to compulsorily purchase land for affordable housing, where there is clear evidence of need, at less than development value. The price ceiling for compulsory purchase of land zoned for development could be lowered to agricultural value plus half of the difference between that and development value. On Rural Exception Sites outside development boundaries, a lower ceiling could apply (4.4).** The devolution settlement is silent on compulsory purchase, but the Wales Act 2017 will reserve compulsory purchase compensation powers to the UK Government in Westminster, reducing Wales' autonomy.

- Rural regeneration projects could be assisted by land asset transfers from local authorities to not-for-profit community organisations.

**RECOMMENDATION 3: Local authorities should develop a more systematic process for community asset transfers of land (2.5.3-2.5.4).** Carmarthenshire County Council and other local authorities have the main role.

- **RECOMMENDATION 4: A Community Right to Build policy should be introduced into Wales, and be included as a permitted category of rural development (4.4).** The Welsh Government would determine this because housing is a devolved matter.

- **RECOMMENDATION 5: Policies should also restrict developers' land banking by**
  - **Limiting applications to renew expired planning permissions** (4.4). This might be achieved by local planning authorities and the Welsh Government together.
  - **Exempting community land trusts from leasehold enfranchisement and from bans on leasehold sales**(5.5.2). The UK Government in Westminster could do this for England and the Welsh Government could develop its own policy for Wales. A ban leasehold sales of new homes would restrict capacity to keep homes affordable, and decrease tenure options. Affordable homes would increasingly be rented homes.

### **One Planet Developments and one planet living – to increase access to land-based livelihoods**

- **A One Planet Development hamlet of smallholdings on the edge of a settlement is not currently economically feasible because land costs too much in relation to typical incomes from small land-based enterprises.** (Introduction)
- One Planet Development neighbourhoods could be feasible where land can be acquired at agricultural rates, but prices are rising to double agricultural value because vendors have begun to see OPD as a niche market. (3.2.1)
- Communal One Planet Developments composed of multiple unrelated households, which co-own a freeholding or long lease-holding company, are at risk of governance failure which threatens project viability. This model seems unsuitable for a pioneer project which would inevitably attract publicity. (5.4.1)
- Single-household freehold One Planet Developments seem the best way forward for this sector, with residents co-operating voluntarily in specific ventures if they wish. (5.5.2)
- One Planet Developments are good for biodiversity, added-value food production and renewable energy. (1.1)
- Applicants for One Planet Developments need enough money to buy land and build a home. Many applicants sell homes in more expensive areas than West Wales, to provide the capital they need. (9.3.4)
- One way to help bridge the gap between incoming One Planet Development enthusiasts and the established farming community would be for agricultural and land-based industry colleges to provide more courses in horticulture, agroforestry and permaculture. **RECOMMENDATION 6: Agricultural colleges should consider expansion of the range and depth of courses in fruit and vegetable production, including organic methods, agroforestry and permaculture. Promotion of these courses within their**

**catchment areas could help farming communities and One Planet new entrants to work together and understand each other better.** (2.6.2, 6.3.1)

Individual colleges would need to be convinced of the benefits of doing this. There are strong arguments in favour, including Wales' very low (about 5%) food security in fruit and vegetables, achievement of shorter supply chains between producers and consumers, and knowledge exchange between established farming communities and newcomers.

- Formal, regulated One Planet Developments are at the demanding end of one planet living, One planet living is a broader concept of progress towards living within the resources of planet Earth, and applicable to all new development in Wales, including the possibilities in this study. (9.3)

# Introduction

A sustainable neighbourhood for Llandovery? What exactly does this mean? The answer has altered during the course of investigating the possibilities.

Carmarthenshire LEADER Local Action Group, which agreed to help fund the study, expected to see:

- Detailed description of the project
- Route maps to take ideas forward
- Obstacles, barriers and challenges
- Benefits
- Organisational structure
- Three-year cash flow projection
- Three-year business plan
- Recommendation on viability

The final report departs from the expectation because it became clear that a One Planet Development neighbourhood bordering Llandovery, or any other settlement, with individual households meeting communally the requirements of the compulsory management plans, is not currently feasible.

The original idea was for an edge-of-town neighbourhood, with up to 25 homes, to meet all the requirements of a One Planet settlement, as detailed in Welsh Government policy. It was thought by Calon Cymru Network that such a neighbourhood could be replicated in multiple locations, helping Wales to meet its daunting climate change mitigation targets. A 'One Planet Life' means living within the bounds of the renewable resources of our single planet Earth, which due to human activity is rapidly losing its life-sustaining resources.

But one planet living is radically different from 21<sup>st</sup> century consumerist lifestyles and may represent a shift too extreme for many to undertake in one step. The current One Planet settlements in Wales have been driven by concerned, ecologically aware, hard-working and determined individuals who, with their families, accept pioneering roles.

The technical guidance for the One Wales: One Planet policy of the Welsh Government allows for One Planet neighbourhoods close to existing settlements, as well as in deep countryside, and so this became a possibility for Calon Cymru Network to investigate in or near Llandovery. This is a town in need of more adults of working age to rejuvenate the demographic profile, which shows that nearly three residents in ten receive the state old age pension. The imperative to cut harmful emissions from transport indicates that localities should decrease their reliance on importing and exporting both goods and commuting workers, to become more self-supporting.



The Calon Cymru Network, formed in 2009 to stimulate regeneration along the Heart of Wales railway corridor, argues for One Planet principles, and wanted to find out if a One Planet neighbourhood, requiring a minimum of 80 to 100 acres, would be feasible.

Planning permission for One Planet Development requires applicants to justify how they will obtain at least 30% of their household's basic requirements from the land, and the balance up to 65% indirectly, through craft and educational activities, for example. Each year, those who have received planning permission must prepare and submit a management report quantifying and valuing all their activities. The emphasis on self-sufficiency means that One Planet undertakings cannot afford to pay development prices, or anything close, for the land they occupy. The influence of land prices and policies on the concept of a sustainable neighbourhood is explained in the section 'The Land Conundrum'.

A One Planet neighbourhood adjoining Llandovery would require a philanthropic landowner to sell or issue a long lease on land at no more than agricultural value, for the concept to be viable for One Planet enterprises, which usually yield only small cash sums, about £5,000 to £15,000 a year in addition to the value of resources consumed on site. We have enquired, but no such philanthropic landlord has come forward.

Could the public sector set a philanthropic example? Carmarthenshire County Council, perhaps? The county council is under an obligation to obtain best value for land disposals. This can include community benefit as well as cash, but even if officers and councillors concluded that a One Planet neighbourhood was justifiable as a demonstration project to guide future policies for lifestyles with very low adverse environmental impact, the only suitable block of council-owned land at Llandovery is smaller and let on a ten-year agricultural tenancy. Therefore it is not currently available for any other purpose.<sup>2</sup>

A public meeting organised by Calon Cymru in Llandovery signalled demand for social housing, proven by the number of applicants on the waiting list for homes. (See under 4.3)

The process of investigation led to a shift in emphasis from an abstract and presently unattainable goal of an edge-of-town One Planet neighbourhood to a different scenario. This scenario explores those elements of one planet living which are feasible to incorporate on each site without subjecting occupants, who might well be from the housing waiting list, to unfamiliar and demanding reporting requirements.

Criteria informing Calon Cymru Network's search are:

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<sup>2</sup> It is entirely possible that council-owned land could be available at other locations, but Llandovery was the designated location for this study.

- Provision of homes for local people to rent and sites for self-builders to buy. It is generally impossible to construct affordable homes to rent without subsidy, whether from government, or philanthropists, or both (see especially 9.2, 11.3.4 ).
- Homes to be constructed of locally sourced materials and designed to have energy performance certificates rated top-of-the-scale A.
- Rainwater management, waste water management and renewable energy on site.
- Homes to have office work space, fast broadband capability and electric vehicle charging point.
- Location within one mile of public transport, so that fewer residents feel obliged to have a private vehicle.
- Sites to have garden space, and/or allotments/ orchard for small-scale fruit and vegetable production, with surpluses contributing to ventures such as Black Mountain Food Hub's 'patchwork farm', or for direct sale locally. This would not be One Planet Development but would accord with the spirit of the Well-being of Future Generations (Wales) Act and the Environment (Wales) Act.

These guidelines do not preclude Calon Cymru Network, probably through a land trust, from acquiring land in the countryside for full One Planet Development, but from a regeneration point of view, small urban and peri-urban developments in the One Planet spirit are a feasible way forward.

The key is to spot opportunities and to work with individuals and organisations -- which may be different for each site -- to deliver homes that are low-cost to build, maintain and live in, and where residents' environmental footprints are substantially lower than in a conventional housing estate. They would be steps on a pathway to one planet living.

# Section 1 The Rationale for the Project

## 1.1 One Wales One Planet

Calon Cymru Network's proposal for a 'One Planet' low-impact neighbourhood at Llandovery, Carmarthenshire, unites two themes:

1. The Welsh Government's objective to reduce greenhouse gas emissions by 80% before 2050.
2. Calon Cymru Network's ideas to revitalise the rural towns and villages in the Heart of Wales railway corridor, to make them self-sustaining with a positive impact on the environment, local economy, culture and social cohesion.

Wales is a pioneer of low-impact development, notably by means of the One Wales: One Planet<sup>3</sup> sustainable development scheme, an outcome of the Labour and Plaid Cymru coalition government between 2007 and 2011. One Wales: One Planet explains (p.11) that:

"Our Scheme for Sustainable Development is consistent with the overarching principles of the UK shared framework:

- **living within environmental limits:** by setting out a pathway to using only our fair share of the earth's resources, and becoming a One Planet nation within the lifetime of a generation;
- **ensuring a strong, healthy and just society:** our focus on how a sustainable approach will improve the quality of life and wellbeing of the people of Wales, and especially those in our less well-off communities;
- **achieve a sustainable economy:** by setting out how we want to transform our economy so that it is low carbon, low waste;
- **promoting good governance:** through confirming sustainable development as the central organising principle of the Welsh Assembly Government, and through encouraging and enabling others to embrace sustainable development as the central organising principle;
- **using sound science responsibly:** through the use of our SD *[sustainable development]* principles, as part of our evidenced-based approach to policy making."

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<sup>3</sup> One Wales: One Planet – the sustainable development scheme of the Welsh Government, May 2009. ISBN 978 0 7504 5169 7

One Planet Developments, as one route towards an environmentally and ecologically healthy Wales, feature in Technical Advice Note (TAN) 6 – Planning for Sustainable Rural Communities,<sup>4</sup> in section 4, Sustainable Rural Housing.

As TAN 6 notes, “One Planet Development is potentially an exemplar type of sustainable development. One Planet Developments should initially achieve an ecological footprint of 2.4 global hectares<sup>5</sup> per person or less in terms of consumption and demonstrate clear potential to move towards 1.88 global hectare target over time. They should also be zero carbon in both construction and use.” (TAN 6 section 4.15.1, p.24)

Each person in Wales used 4.66 global hectares, on average, in 2006, so the reduction in use of non-renewable resources needs to be substantial.

The rationale for One Planet Development in TAN 6 includes the following:

“Planning applications for One Planet Developments in the open countryside must justify the need to live on the site and quantify how the inhabitants’ requirements in terms of income, food, energy and waste assimilation can be obtained directly from the site. The land use activities proposed must be capable of supporting the needs of the occupants, even on a low income or subsistence basis, within a reasonable period of time (no more than 5 years). It will also be necessary to identify a clear relationship between the use of the land and projects proposed and the number of occupants to be sustained on the site in terms of the need for them to work the land or ensure the smooth running of the venture and the return that is gained. The business plan should include a statement that the development will be the sole residence for the proposed occupants.” (TAN 6 section 4.17.1, p.25)

TAN 6 was followed in 2012 by One Planet Development Practice Guidance,<sup>6</sup> 77 pages of criteria to inform applicants and local planning authorities in Wales.

The guidance lists the basic types of One Planet Development as

- Single household - self-sufficiency based single dwelling
- Land based enterprise – a producing agricultural holding, strong self-sufficiency and also market-facing
- Small group of dwellings – a small group of households, self-sufficiency based, limited shared facilities / activities
- Small planned community - small group of households, self-sufficiency based, organised around shared facilities / activities, economies of scale and cooperation

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<sup>4</sup> Technical Advice Note 6 – Planning for Sustainable Rural Communities. Welsh Government, July 2010. F1711011

<sup>5</sup> A global hectare is a biologically productive hectare with world average biological productivity for a given year. Source: <http://www.footprintnetwork.org/resources/glossary/>, accessed April 17 2017.

<sup>6</sup> One Planet Development Practice Guidance, October 2012, ISBN 978 0 7504 8242 4. Prepared for the Welsh Assembly Government by Land Use Consultants and the Positive Development Trust.

- Ecovillage (larger planned community) - larger group of households, strong self-sufficiency planned around shared facilities / activities, economies of scale and cooperation, greater diversity of residents  
(One Planet Development Practice Guidance p.5)

Essential characteristics of a One Planet Development are also set out in the Practice Guidance (p.2):

“One Planet Developments must:

- Have a light touch on the environment – positively enhancing the environment where ever possible through activities on the site.
- Be land based – the development must provide for the minimum needs of residents in terms of food, income, energy and waste assimilation in no more than five years.
- Have a low ecological footprint – the development must have an initial ecological footprint of 2.4 global hectares per person or less with a clear potential to move to 1.88 global hectares per person over time – these are the Ecological Footprint Analysis benchmarks for all One Planet Development.
- Have very low carbon buildings – these are stringent requirements, requiring that buildings are low in carbon in both construction and use.
- Be defined and controlled by a binding management plan which is reviewed and updated every five years.
- Be bound by a clear statement that the development will be the sole residence for the proposed occupants.”

One of the best known low-impact developments, Lammas at Glandŵr, Pembrokeshire, is strictly speaking the result of an earlier policy. It predates the TAN 6 policy, and received permission under Policy 52, created by Pembrokeshire County Council and the Pembrokeshire Coast National Park Authority in 2006.<sup>7</sup> Policy 52 says:

“Proposals need to be tied to the land and provide sufficient livelihood for the occupants. One or more households can be involved in an individual proposal.”  
(Low Impact Development Making a Positive Contribution, Introduction, p.5)

Policy 52 was tougher than TAN 6 because it required residents to meet 75% of their basic household needs from their land, compared with 65% under the later policy. Lammas resident Tao (Paul) Wimbush, who spent months preparing the application, found it an exhausting process, and not universally welcomed by councillors or planning officers. After receiving a planning application on June 1 2007, the planning authority – the county council, because Glandŵr is not in the national park – took

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<sup>7</sup> Joint Unitary Development Plan for Pembrokeshire 2000-2016 – Supplementary Planning Guidance – Low Impact Development Making a Positive Contribution. Adopted by Pembrokeshire Coast National Park Authority May 24 2006 and by Pembrokeshire County Council June 26 2006.

until August 2009 to make a decision, assisted by 51 reports and 27 appendices in a submission totalling 2,137 pages.<sup>8</sup>

The Lammas ecovillage has nine smallholdings sold on 999-year leases, each with about six acres of land. Lammas Low Impact Initiatives Ltd owns the freehold of the smallholdings and the communally managed land. Woodland and water, making up the balance of the 76 acres, are managed communally. Residents submit annual reports to the county council, and have met the terms of their planning permission. Their experiences over 10 years show that an eco-neighbourhood can both protect the land and its resources, and sustain the occupants.

The land at Lammas was unpromising, at first sight. It had been used for sheep grazing and yielded total revenue of £2,500 to £3,500 a year. The ecology is now more varied and the soil more fertile, and in Year 4 of the venture, 2013, the land yielded £41,662-worth of food, water, fuel and other renewable energy consumed on-site, £19,339 from produce sold or bartered, and £6,043 from educational activities, in all meeting 64% of the households' needs.<sup>9</sup> Two years later in 2015, the land yielded directly consumed produce and energy valued at £59,109, plus £26,873 from produce and products sold or bartered to others, and £21,283 from educational activities, a total of £107,265 – 92% of residents' needs.<sup>10 11</sup> Typical educational activities include courses in land-based skills.

The initial success of the Lammas project showed that:

- Transforming productivity took less than ten years.
- Grazing land of low economic utility has increased yield 30-fold, due to careful and scientific ecological management, with mixed and companion planting, water harvesting and recycling, composting, and pollinating insects such as bees.

In addition, the land presented an attractive and varied vista which added to the vitality of the countryside.

## 1.2 Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act 2015 requires public bodies to think in a more sustainable and long-term way. The Act lists seven goals:

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<sup>8</sup> More information in *The Birth of an Ecovillage: adventures in an alternative world*, by Paul Wimbush, FeedARead Publishing, 2012. ISBN 978 1 78176 492 3.

<sup>9</sup> Figures on p.419 of *The One Planet Life: a blueprint for low impact development*, by David Thorpe, Routledge, 2015. ISBN 978 0 415 73855 2.

<sup>10</sup> *How does One Planet Development support the duties of public bodies under new Welsh legislation*, briefing paper from the One Planet Council,

<sup>11</sup> *How does One Planet Development support the duties of public bodies under new Welsh legislation*, briefing paper from the One Planet Council,

1. **A prosperous Wales** - An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.
2. **A resilient Wales** - A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).
3. **A healthier Wales** - A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.
4. **A more equal Wales** - A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances).
5. **A Wales of cohesive communities** - Attractive, viable, safe and well-connected communities.
6. **A Wales of vibrant culture and thriving Welsh language** - A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.
7. **A globally responsible Wales** - A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

The Act establishes Public Services Boards (PSBs) for each local authority area in Wales. Each PSB must improve the economic, social, environmental and cultural well-being of its area by working to achieve the well-being goals. The vision in the Act is broad, and open to wide interpretation, but nevertheless sets a direction towards a Wales of healthy, gainfully employed people flourishing in a protected natural environment.

### 1.3 Environment (Wales) Act 2016

The Environment (Wales) Act 2016 sets specific and tough limits for greenhouse gas emissions.

- The Welsh Government must ensure that the net Welsh emissions for the year 2050 are at least 80% lower than the baseline (1990 or 1995<sup>12</sup>), with the Welsh Government able to increase this target;
- By the end of 2018, the Welsh Government must set interim emissions targets for 2020, 2030 and 2040;
- For each five-year budgetary period the Welsh Government must set a maximum total amount for net Welsh emissions (a carbon budget); and
- The Welsh Government will be required to take into account international agreements to limit increases in global average temperatures.<sup>13</sup>

A drop of 80% from either 1990 or 1995, depending on the individual gas, is a tall order requiring people to live and work differently, travelling less, using renewable energy and protecting air, water, and soils and other non-renewable resources. The Climate Change Strategy for Wales Update, August 15 2016, explains that emissions – although excluding heavy industry and power generation<sup>14</sup> -- must fall by 3 percentage points a year, at least 40% by 2020 compared to 1990.

Wales is lagging behind other UK nations except Northern Ireland in its efforts to reduce emissions, the National Assembly for Wales Research Service reported in July 2016:<sup>15</sup>

“Compared to the 1990 baseline, Welsh emission reductions fell behind those of the other devolved administrations of the UK. While Wales has seen a decrease of 18% in greenhouse gas emissions since the baseline, Scotland and England have seen decreases of 41% and 38% respectively. However, Northern Ireland has seen a slightly lower decrease than Wales, with a 17% reduction in emissions over this period.”

Energy generation and supply accounted for 38% of Welsh emissions in 2014, industrial processes 7%, this report stated. Both are excluded from Wales’ reduction targets as policy is not devolved to Wales. Industrial processes were releasing almost 9% more emissions in 2014 than in 1990, although emissions from energy supply showed a 3% fall.

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<sup>12</sup> See ‘In Brief’ from the National Assembly for Wales Research Service, <https://assemblyinbrief.wordpress.com/tag/environment-wales-act-2016/>, accessed April 18 2017. The report uses data from the National Atmospheric Emissions Inventory’s Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990-2014.

<sup>13</sup> From the National Assembly for Wales Research Service blog ‘In Brief’, above.

<sup>14</sup> Heavy industry and power generation account for about 31% of greenhouse gas emission from Wales: Climate Change Strategy for Wales Summary Version, October 2010, p.5.

<sup>15</sup> Greenhouse gas emissions in Wales down by 8%, by Edward Armstrong and David Millett, July 7 2016.



**Table 1 Greenhouse gas emissions in Wales, 2014**Kilotonnes of carbon dioxide equivalent (ktCO<sub>2</sub>e)

Sector	1990	2014	% change 1990 to 2014	% of 2014 total
<i>Energy supply</i>	18,069	17,509	-3.1	38
Business	13,701	9,270	-32.3	20
Agriculture	6,845	5,818	-15.0	13
Transport	6,093	5,923	-2.8	13
Residential	4,990	3,663	-26.6	8
<i>Industrial processes</i>	2,966	3,230	+8.9	7
Waste management	3,478	987	-71.6	2
Public sector	771	328	-57.5	1
Land use, land use change and forestry	-295	-296	-0.3	-1
Total	56,620	46,402	-18.0	101

Percent column totals 101 because of rounding. Energy supply and industrial processes (in italics) are excluded from Wales' targets because they are not within devolved competence.

Source: from Table 4.1 in Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland (1990-2014)

Overall, in 2014 Wales was emitting 18% less than in 1990. The 2014 total was 46,402 kilotonnes of carbon dioxide equivalent, compared with 56,620 in 1990. Considering only the sectors counting towards the devolved reduction targets, the fall is 28%,<sup>16</sup> but this is still below the rate needed to reach the target of 80% in 60 years. Deeper cuts will be needed.

### 1.4 Planning (Wales) Act 2015

The Planning (Wales) Act 2015 presents an opportunity to mirror the Well-being of Future Generations and Environment acts in planning regulations. The Planning Act focuses on a national land use plan and strategic development plans, which have value as advisory documents and could result in greater freedom for communities to respond to climate change and resource constraints by adapting planning regulations to suit the new circumstances.

According to the Welsh Government, the key purposes of the Act are to:

- Strengthen the plan-led approach to planning. The Act introduces a new legal framework for the Welsh Ministers to prepare a national land use

<sup>16</sup> Data from 'Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990-2014'.

plan, to be known as the National Development Framework for Wales. The framework will set out national land use priorities and infrastructure requirements for Wales.

- Make provision for the production of Strategic Development Plans, to tackle larger-than-local cross-boundary issues, such as housing supply and areas for economic growth and regeneration.
- Make provision for pre-application consultation, and to require local planning authorities to provide pre-application services.
- Provide for planning applications for nationally-significant projects to be made to the Welsh Ministers. Applicants for planning permission will also be able to apply to the Welsh Ministers for planning permission where a local planning authority is deemed to be poorly performing.
- Reform the development management system to streamline procedures, to ensure that applications are dealt with promptly, providing certainty for developers and communities.
- Improve enforcement and appeal procedures. Changes are also made in relation to the recovery of costs for parties involved in planning cases.
- Make changes in relation to applications to register town and village greens.<sup>17</sup>

There is the possibility that strictly defined land use zones could hinder the aims of the Environment Act, by inhibiting dispersed, more localised economic activity with emissions reduction and environmental protection at its heart. The Well-being of Future Generations Act refers to the “capacity to adapt to change”, which land use zoning can restrict.

The Planning Act illustrates a tension between those in government who like to follow blueprints and those more in the ‘bricolage’<sup>18</sup> tradition who aim for policies which respond to changing contexts. One Planet Developments, for example, are more in tune with bricolage than blueprint.

Steve Packer, planning consultant and former senior planning officer and specialist services manager with Powys County Council, concludes that local planning authorities have been reluctant to incorporate the One Planet policy in TAN 6 into current Local Development Plans (LDPs).

“The fundamental principle in all the LDPs is to follow the old methodology of predominantly confining development within existing settlement boundaries, and the

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<sup>17</sup> <http://senedd.assembly.wales/mgIssueHistoryHome.aspx?Ild=11271>, accessed 18 April 2017.

<sup>18</sup> Bricolage, a term for do-it-yourself in French, is used in sociology to describe an experimental approach making use of materials and methods which are available.

settlements are placed in a hierarchy according to facilities and their perceived 'sustainability', he writes.<sup>19</sup> He continues: "Given the economic environment within which they have been operating and the rigidity of this approach, it is hardly surprising that their aims in terms of sustaining rural communities have not been a great success."

Generally, planning authorities' LDPs, with their zoning, have made little reference to the Welsh Government's One Planet policy. Steve Packer calls "the failure to take up the opportunities for revitalising rural Wales offered by the progressive thinking in TAN 6" a "major omission". He studied four LDPs:

- Carmarthenshire 2014-2021
- Ceredigion 2007-2022
- Pembrokeshire 2013-2021
- Powys (not yet approved, under examination)

He found that Pembrokeshire alluded to it, but only Powys included OPD in housing policy. Carmarthenshire makes this brief mention in Appendix 5, Rural Development:

"Paragraph 4.15 of TAN 6 provides sufficient information relating to One Planet Developments, which look at providing Low Impact Development in a Welsh Context. Given the rural nature of the majority of the county, it is more likely that all One Planet Development would develop in open countryside locations, and outside the development limits of any settlements identified within the LDP.

"In appraising a One Planet Development, applicants should consider the design principles for its development. It is imperative that the design of one dwelling, or a group of dwellings within a co-operative should integrate into the landscape and reflect the rural character. Proposals will be expected to utilise materials which are reflective of its rural and locational context alongside the other requirements of the One Planet objectives." (paragraphs 5.1 and 5.2)

Ceredigion County Council mentions One Planet Development in its LDP:

"One Wales sets out the Assembly's progressive agenda for improving the quality of life of people in all of Wales's communities. The document sets out actions the Assembly will undertake as part of this agenda and some of these have relevance to the LDP, especially those under the theme of Living Communities and a Sustainable Environment. Additionally more subject specific information can be found in One Wales: Connecting the Nation which is the Assembly's strategy for transport and One Wales: One Planet, which sets out how the Assembly intends to promote sustainable development. One Wales has influenced many aspects of the LDP." (Paragraph 2.8)<sup>20</sup>

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<sup>19</sup> Local Development Plans and One Planet Development, personal communication from Steve Packer, received April 18 2017.

<sup>20</sup> There are several other mentions throughout the LDP document.

Inclusion of OPD in local development plans is important, Steve Packer reckoned, because “when an application is made to a planning authority, it is considered primarily in the context of LDP policies”. For a 2015 OPD application by Erica Thompson at Rhiw Las near Whitland in Carmarthenshire, members of the planning committee could not understand why the case officer in the planning department had recommended approval, when in their view it was wholly counter to the zoning rules in the LDP, which they felt took precedence over OPD policy. Their confusion reflects a widespread lack of understanding about the legitimacy of OPD and its potential contribution to rural regeneration.

Erica Thompson’s application at Rhiw Las, for four smallholdings on 21.5 acres, was allowed on appeal, and at the time of writing the development is proceeding.

In Steve Packer’s view, the Welsh Government could require LPAs to identify suitable areas for OPD, as they have to for areas with renewable energy potential. LPAs could also produce supplementary planning guidance for OPD.

## 1.5 One Planet Llandovery

This study stems from Calon Cymru Network’s suggestion for a One Planet neighbourhood at or close to Llandovery, with up to 25 homes, on enough land to provide at least 65% of residents’ food and energy needs. The shape of the neighbourhood would depend on the availability and cost of suitable land.

The neighbourhood would differ from current One Planet enterprises in that there would be some provision for residents who, over time, become too frail or disabled to work. This provision could be in home extensions or in new dwellings within the neighbourhood.

Calon Cymru suggested Llandovery for this project because the town is on the Heart of Wales railway, which connects Llanelli in Carmarthenshire with Craven Arms in Shropshire, and via these stations with the rest of the UK’s railway network. Llandovery also has bus services to Llandeilo and Carmarthen, Lampeter and Builth Wells. Residents who use public transport, rather than travelling in their own vehicles, contribute to the emission reductions that Wales must achieve.

Other important reasons for choosing Llandovery relate to the problems caused by its ageing population. In 2015 27% of residents in the Llandovery local government ward were aged 65 and over, compared with just 18% aged 25 to 44. The dearth of young families is a major reason for the closure, in February 2016, of the town’s comprehensive school. The town’s location at the confluence of the Bran and Gwydderig with the river Tywi means that there is little potential building land with minimal flood risk, so given the LPA’s policy of keeping settlement within strict confines, the population has not expanded. Between 1901 and 2015 the population of Wales grew from 2.015 million to 3.099 million, growth of almost 54%, but in the

Llandovery area the population has fallen. In 1901 7,778 persons lived in Llandovery Rural District, comprising Llandovery, Cilycwm and Llangadog. In 2015 these areas had a combined population of 5,988, a fall of 23%.<sup>21</sup>

Demand from retirees and holidaymakers keeps property prices higher than could be justified by local incomes alone. The median household income in Llandovery in 2016 was £20,848, but mean property prices in the year to April 2017 were £157,085, according to Rightmove. Home.co.uk calculated that the mean price of Llandovery properties on the market in April 2017 was £186,917, and the median price was £133,000.<sup>22</sup> This median price is 6.4 times the median household income.

## 1.6 Calon Cymru Network

### 1.6.1 Origins

Calon Cymru Network dates from 2009, when a small group of architects decided to campaign for economic renewal along the corridor of the Heart of Wales railway, especially between Llandeilo and Knighton. Their vision for a 'Fforest Calon Cymru' included the development of horticulture and forestry, energy from renewables, and affordable housing including live-work homes.

The group has become a community interest company, has expanded to include professionals in sustainable agriculture, planning, energy and transport, and now seeks to embark on a practical project to promote the creation of a 'sustainable neighbourhood' at or near Llandovery.

### 1.6.2 People

Architects Martin Golder, Ken Pearce and Mark Waghorn are the directors of Calon Cymru Network CIC. Energy specialist David Thorpe is the administrator. Members include David Edwards and Gill Wright from the Heart of Wales Line Development Company, planning consultants Steve Packer and James Shorten, sustainable agriculture consultant Tony Little, and architect Nick Dummer. Dr R Brinley Jones, former president of the National Library of Wales and current president of University of Wales Trinity St David, is patron. Calon Cymru has received considerable assistance from Dr Jane Davidson, director of the Institute of Sustainable Practice, Innovation and Resource Effectiveness (INSPIRE) at University of Wales Trinity St David, and previously minister for environment, sustainability and housing in the Welsh Government, 2007-2011. It was during Dr Davidson's time in post that Wales's 'One Planet' policy was adopted and sustainability became a central organising principle.

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<sup>21</sup> 1901 census data from [www.visionofbritain.org.uk/unit/10382970/cube/TOT\\_POP](http://www.visionofbritain.org.uk/unit/10382970/cube/TOT_POP), 2015 data from Carmarthenshire County Council ward profiles.

<sup>22</sup> Data accessed 18 April 2017.

## 1.7 Project Purpose

To initiate development near Llandovery which will accord with these criteria:

- Contribute to the Welsh Government's target, explicit in the Environment (Wales) Act 2016, of reducing greenhouse gas emissions by 80% before 2050.
- Meet the seven goals that the Well-being of Future Generations (Wales) Act 2015 requires. (see 1.2 above)
- Exemplify the 'One Planet' concept detailed in One Wales: One Planet – the sustainable development scheme of the Welsh Government, published in 2009 and the associated guidance in 2010's Technical Advice Note 6, Planning for Sustainable Rural Communities.

The means to achieve these criteria could be:

1. A group of 'One Planet' smallholdings with self-built homes, ideally within two miles of Llandovery or another station on the Heart of Wales railway, on land which is outside settlement limits and so, in theory, could be acquired at little more than agricultural value.
2. 'One Planet' regulations, for each household to produce at least 30% of their basic needs directly from the land and the balance up to 65% indirectly from the land, for example from crafts or education, to be met on a group rather than individual basis, to allow for residents who fall ill or who become frail.
3. A mix of zero-carbon and near zero-carbon homes, at affordable prices and rents, with resale restrictions to retain affordability for future occupants. The homes could be on Rural Exception Sites adjacent to settlement limits where, also in theory, land could be acquired at a discount to development value. Communal open space could be used for allotments and orchards as well as for children's play.
4. Affordable homes would have space for home working – to limit polluting emissions and wasted time during commuting.
5. Provision of workshops and other premises to create employment opportunities for new residents, who would improve the demographic balance. Unemployment in Llandovery is low. In December 2016 only 1.0% of residents were in receipt of Job Seeker's Allowance. This reflects the high proportion of retired people (in May 2016 28.3% were in receipt of the state pension).

The purpose of this study was to investigate the feasibility of these means to achieve the desired outcomes, to identify barriers and to suggest policy changes which could reduce the barriers. As explained in the Introduction above, the barriers are substantial and inform the recommendations set out in Headlines. Nevertheless, the study still accords with several of the European Rural Development Priorities. These priorities are:

- 1. Fostering knowledge transfer and innovation in agriculture, forestry and rural areas.**
2. Enhancing farm viability and competitiveness of all types of agriculture in all regions and promoting innovative farm technologies and the sustainable management of forests.
3. Promoting food chain organisation, including processing and marketing of agricultural products, animal welfare and risk management in agriculture.
4. Restoring, preserving and enhancing ecosystems related to agriculture and forestry.
5. Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors.
- 6. Promoting social inclusion, poverty reduction and economic development in rural areas.**

This study's Recommendation 6 aligns with the first priority for knowledge transfer and innovation, and Recommendations 1 to 5 align with the sixth priority, for social inclusion, poverty reduction and economic development.

The study has a wider focus than formal One Planet Developments which are subject to strict monitoring rules. The emphasis is on one planet living, a set of concepts more applicable to the population as a whole. (See Glossary)

## Section 2 Six Frames

Calon Cymru's 'Sustainable Neighbourhood' project can be interpreted through six frames, all of which have challenges. The frames employed here are

- Global
- Continental -- Europe
- The UK
- Wales
- County – the Heart of Wales railway corridor in Carmarthenshire
- Local – Llandovery in Carmarthenshire, on the margins between West and Mid Wales

### 2.1 The Global Frame

#### 2.1.1 Risks of Environmental Damage, Food and Water Shortages

The changing climate, in response to man-made factors such as greenhouse gas emissions as well as to natural factors like solar activity, which in turn change the composition of the atmosphere and the direction and intensity of air flows, has a major impact on the future of food production. Climate change, alongside a global population which is still increasing and soils which have lost fertility, means that the volume of food traded internationally is likely to fall and shortages are forecast to increase.<sup>23</sup> The World Bank's Global Economic Prospects Report for 2017<sup>24</sup> is subtitled "Weak Investment in Uncertain Times". The World Economic Forum, in its Global Risks Report 2017, says

"Over the course of the past decade, a cluster of environment-related risks – notably extreme weather events and failure of climate change mitigation and adaptation as well as water crises – has emerged as a consistently central feature of the GRPS [*Global Risks Perception Survey*] risk landscape, strongly interconnected with many other risks, such as conflict and migration. This year, environmental concerns are more prominent than ever, with all five risks in this category assessed as being above average for both impact and likelihood." (p.6)

Food shortages lead to political unrest, and indeed any rise in political instability would be alarming, given the current (2017) tensions especially in North Africa, the Middle East, and South and Central America. The World Food Programme's Global Report on Food Crises 2017, covering the year 2016, does not pull punches:

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<sup>23</sup> 'Threat to future global food security from climate change and ozone air pollution' by Amos P K Tai, Maria Val Martin and Colette L Heald, in *Nature Climate Change* vol. 4, no. 9, July 27 2014, offers a useful forecast, including "We show that warming reduces global crop production by >10% by 2050 with a potential to substantially worsen global malnutrition in all scenarios considered."

<http://www.nature.com/nclimate/journal/v4/n9/full/nclimate2317.html>

<sup>24</sup> Published in January 2017.



“In 2016, major food crises were fuelled by conflict, record-high food prices and abnormal weather patterns caused by El Niño. Crises were widespread and severe, in some cases affecting entire national populations, and in others, causing intense damage in localized areas such as in northeast Nigeria. Moreover, shocks were not bound by national borders, and the spillover effects had a significant impact on neighbouring countries....” (p.4 of the Executive Summary)

Europe, in the decades since 1945 relatively insulated from severe political upheavals, has relied on regular trade flows which have started to fracture.

### 2.1.2 Relevance to the Calon Cymru Project

Climate change, soil degradation, uncertain water and fossil energy availability, and fluctuating food supplies demand local action to maximise resilience. This means having the capacity and skills to achieve higher levels of self-sufficiency and to replace non-renewable resources with renewable ones. The ‘sustainable neighbourhood’ rationale accords with these imperatives.

## 2.2 The European Frame

### 2.2.1 Political Fractures to Spur Re-localisation

Water supplies are an issue in Mediterranean nations such as Spain, where intensive, irrigated horticultural production targeted at export markets has depleted water tables. In Spain, according to an article in the journal *Water*:<sup>25</sup>

“[Over] the last two decades, the water economy ... has faced significant changes in response to the country’s socioeconomic and environmental development. During this period, Spain has become a mature water economy, characterized by a high and growing water demand, an intense competition for water resources among territories and users, an inelastic long-run water supply, aging water storage and delivery infrastructure in need of expensive repair or renovation and significant negative externalities associated with water pollution or groundwater salinization. As a consequence of this mature phase, most of the eastern and southern river basins in Spain have no margin for satisfying further water requests without reducing existing demands.”

Water shortages are a serious global problem, expected to worsen in response to climate change.<sup>26</sup>

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<sup>25</sup> ‘Water markets in Spain: performance and challenges’ by Sara Palomo-Hierro, José A. Gómez-Limón, and Laura Riesgo, in *Water*, 2015, no.7, pps 652-678.

<sup>26</sup> “Today some 18 countries, containing half the world’s people, are overpumping their aquifers. Among these are the big three grain producers – China, India and the US – and several other populous countries, including Iran, Pakistan and Mexico. During the last couple of decades, several of these countries have overpumped to the point that aquifers are being depleted and wells are going dry. They have passed not only peak water, but also peak grain production. Among the countries whose use of water has peaked and begun to decline are Saudi Arabia, Syria, Iraq and Yemen. In these countries peak grain has followed peak water.” – from ‘The real threat to our future is peak

Political goodwill has depleted too, following the austerity measures introduced after the banking crisis of 2007-09. Greece is a cauldron of social unrest, and in the southern European nations of Portugal, Spain, Italy and Greece, youth unemployment is colossal. In Greece in February 2017 45.2% of people under 25 had no job, in Spain 41.5%, in Italy 35.2% and in Portugal 25.4%.<sup>27</sup>

‘Re-localisation’ is a contested concept throughout Europe, and does not lend itself to analysis on the traditional left-right dichotomy. Supporters of re-localisation, who by implication are anti-globalisation, include Marine Le Pen of France’s Front National, regarded as right wing because of anti-immigration ‘France first’ policies. Syriza in Greece and Podemos in Spain, on the other hand, are also anti-globalisation but frequently categorised as left wing because they are dedicated more to what Marx might refer to as class solidarity across national borders, than to one specific national identity.<sup>28</sup>

This fundamental shift in political realities creates instabilities which may extend beyond the UK’s exit from the European Union, and which will be influenced by further destabilising factors such as climate change, depletion of non-renewable resources, and the possible collapse of debt-laden economies. Within the EU five countries have public debt exceeding annual the whole of their annual GDP – Belgium, Greece, Ireland, Italy, and Portugal.<sup>29</sup> This weight of debt is a potentially crushing force on the Euro.

### 2.2.2 Relevance to the Calon Cymru Project

The economic impacts of Brexit are unknown at the time of writing, but trade is likely to be disrupted to some degree. The Euro is not working for the indebted southern nations of the EU, but they have scant fiscal freedom to devise their own solutions. Even if the Eurozone holds, Brexit will have profound implications for the future of the UK by stopping the flow of EU structural funds to poor regions such West Wales and of agricultural subsidies to the whole nation. The rural parts of West Wales, including the upper Tywi valley, would be doubly hit. Social enterprises like Calon Cymru Network could assume larger roles in creating employment and in keeping money circulating within the region rather than being exported to remote shareholders.

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water’, by Lester Brown, *The Observer*, July 6 2013, <https://www.theguardian.com/global-development/2013/jul/06/water-supplies-shrinking-threat-to-food>.

<sup>27</sup> <https://www.statista.com/statistics/266228/youth-unemployment-rate-in-eu-countries>. For comparison, in Great Britain the rate was 12.1% and in Germany, with the lowest youth unemployment rate in the EU, 6.6%.

<sup>28</sup> ‘The political left and right are being upended by globalization politics’ by Nouriel Roubini, [http://www.huffingtonpost.com/nouriel-roubini/globalization-politics\\_b\\_11655494.html](http://www.huffingtonpost.com/nouriel-roubini/globalization-politics_b_11655494.html), accessed April 26 2017

<sup>29</sup> Data in ‘The snowball of debt’ from MarketWatch, published by Dow Jones & Co, November 23 2016.

## 2.3 The UK Frame

### 2.3.1 Holding Land is Tax Free

In the UK land ownership is not taxed annually. Most buildings are taxed, via Council Tax and Business Rates, but not the land they stand upon. Since 1947 there have been several attempts to tax land, all short-lived. The 1947 Town and Country Planning Act in Labour Britain introduced a 100% charge on the rise in land value when it was given planning permission, but the Conservatives suspended the tax when they came to power in 1951 and abolished it in 1954, although public bodies were able to buy land at its existing use value until 1959. The 1966-70 Labour government created both a Land Commission to buy land required for the implementation of national, regional and local plans, and a 'betterment levy' of 40% on value uplift. The following Conservative government of 1970-74 abolished both. When Labour returned in 1974, they tried a 'development land tax' of 80%, which Margaret Thatcher's first Conservative government of 1979-83 cut to 60%, before her second government did away with it in 1985. During the 'New Labour' interval between 1997 and 2010, a 'planning gain supplement' was mooted but the idea, vehemently opposed by developers, was dropped in 2007.<sup>30</sup>

The combination of a fixed supply of land which is untaxed unless ownership is transferred, and strict controls over development, is extremely favourable to those landowners who receive planning permission, and has encouraged developers to accumulate potential development land, which they can hold long-term at minimal cost.

The concept of land availability for an ecologically balanced future, essential to Calon Cymru Network's objectives, is missing from the fiscal framework.

### 2.3.2 Sustainability Missing from Election Debate

Preparation of this study coincided with the campaign for a snap General Election, announced on April 18 2017, with the support of the necessary majority in Parliament but contrary to the intention of the Fixed Term Parliament Act passed only in 2011. While Prime Minister Theresa May wanted to increase the Conservatives' majority, to give her a freer hand in Brexit negotiations, issues that came to the fore in the campaign, apart from Brexit, were largely traditional and income-influenced. Politicians on the Labour left focused on maintaining and increasing public spending, while those on the Conservative right advocated a low tax, low public-spending state.

Neither climate change nor the future supply of food and other basic resources featured significantly in the debate, the assumption being that these issues would not influence voters' decisions.

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<sup>30</sup> *Solving the Grim Equation* by Pat Dodd Racher, Llyfrau Cambria 2015, pps 147-148.

The UK's population is 82.6% urban, according to the World Bank,<sup>31</sup> so the low visibility of rural issues is not surprising, but climate change affects whole populations and its absence from hot election topics is remarkable.

### 2.3.3 Relevance to the Calon Cymru Project

The General Election on June 8 2017 resulted in a markedly less strong and stable government than its predecessor. A Conservative minority administration depending on Northern Ireland's Democratic Unionist Party, and a reinvigorated Labour Party, pose challenges for steering the UK during rushed but critical Brexit negotiations. The Fixed-term Parliaments Act 2011, establishing five-year gaps between elections, was bypassed, and could be again before 2022. Short-term considerations are likely to dominate to the detriment of long-term environmental and climatic priorities. In what could well be a policy vacuum, Calon Cymru Network's role is to press ahead with plans for the low-impact revitalisation of the Heart of Wales line corridor.

## 2.4 The Wales Frame

### 2.4.1 Rural Poverty

Wales is more rural than England. Some 35% of the Welsh population live in rural areas, compared with 17% for England.<sup>32</sup> Despite the relative importance of rural Wales in terms of population, and the inclusion of the rural west – Carmarthenshire, Pembrokeshire, Ceredigion, Gwynedd and Môn – among the poorest regions of the European Union, with gross domestic product per inhabitant, at purchasing power standard, less than 70% of the average for the 28 member nations.<sup>33</sup> These, it should be noted, include 11 countries formerly in Eastern Europe beyond the 'Iron Curtain'.

The Welsh Government relies on European Union grants to help fund regeneration projects. The EU's Common Agricultural Policy subsidises agriculture, and this higher-level control over rural policy has inhibited separate national strategies for sustainable regeneration:

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<sup>31</sup> <http://www.tradingeconomics.com/united-kingdom/urban-population-percent-of-total-wb-data.html>, using World Bank data for 2016, accessed April 26 2017

<sup>32</sup> Election to the National Assembly for Wales 2016 - Briefing Notes, by Cytûn: Churches Together in Wales, <http://www.cytun.org.uk/elections2016/welshassemblybriefingnotesenglish/NationalAssemblyElection-BriefingNote3.pdf>, accessed April 26 2017; also DEFRA's 'Rural Population 2014/15' updated November 9 2016.

<sup>33</sup> Data for 2015 from Eurostat, 'Regional GDP in the EU', published on March 30 2017, reported that West Wales and the Valleys had GDP per capita, at purchasing power standard (PPS), of 68% of the EU average. This was similar to the averages for the whole of Romania (67%) and Poland (69%).

“In agriculture, fisheries, external trade, and the environment, it’s fair to say that EU legislation and policy is indeed the main driver of UK law and policy, although the UK retains some freedom of action in these areas.”<sup>34</sup>

The UK’s exit from the European Union, which was being negotiated as this study was prepared, will mean the end of these financial supports, which unless replaced would create far more economic hardship than currently experienced (see 2.2.1). The current incarnation of the Common Agricultural Policy ends in 2020, the year after the UK should exit the EU on March 29 2019. The UK Government has promised to retain the same payments to farmers until 2022, but that is not long in business planning terms.

Two years are a minimal time to complete complex negotiations, and to put in place alternative arrangements. In the meantime, the rural economy of Wales could suffer serious damage. If there is no Brexit deal and the UK has to export to the EU under World Trade Organisation rules, farmers will be hit hardest. Export tariffs for dairy produce would be 39.4%, for meat 37.8% and for preparations of meat or fish, 39.9%. Sheep farming in Wales is especially vulnerable, because between 32% and 37% of all sheepmeat produced goes to the EU. With export tariffs of 37.8%, Welsh lamb would no longer be competitive. Welsh beef, between 12% and 14% of which is EU-bound, would be similarly affected.<sup>35</sup>

The Welsh Government policy for One Planet Development (see 1.1) brings enthusiastic advocates for sustainable lifestyles into rural areas, without impinging on the subsidy regime, and could be a force for stability in the coming years of political, financial and regulatory change. As yet, though, there is little evidence that local planning authorities see One Planet Developments as anything other than rare exceptions to standard planning regulations which treat new building in the countryside as undesirable unless the applicants can justify their proposals under tightly controlled categories. Also, the arrival of predominantly English-speakers poses challenges for the Welsh language.

The usual categories under which building in the countryside can be allowed are:

- New dwelling on established rural enterprise
- Second dwelling on established farm, or
- New dwelling on new enterprise<sup>36</sup>

These categories require evidence of business need, in the context of conventional commercial operations. Post-Brexit, there is likely to be pressure on farmers to

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<sup>34</sup> ‘UK Law: what proportion is influenced by the EU?’, from the fact checking charity Full Fact, <https://fullfact.org/europe/uk-law-what-proportion-influenced-eu/>, accessed June 3 2017.

<sup>35</sup> Tariffs from ‘Potential post-Brexit tariff costs for EU-UK trade’ by Justin Potts, Civitas Briefing Note, October 16 2016. See also ‘In or out? Welsh farming’s case for and against Brexit’ by Andrew Forgrave, *Daily Post*, June 18 2016, which has a useful summary of the pros and cons.

<sup>36</sup> Technical Advice Note 6, Planning for Sustainable Rural Communities, Welsh Assembly Government, July 2010.

change land uses, and pressure on the Welsh Government and local authorities to permit changed land uses.

The Welsh Government is continuing its enthusiasm for ‘green growth’, as outlined in ‘Future Landscapes: Delivering for Wales, the review of Areas of Outstanding Natural Beauty and National Parks in Wales’.<sup>37</sup> Although this report focuses on National Parks and AONBs, and not the wider areas of wonderful landscapes such as the upper Tywi valley, several of its recommendations are relevant. It proposes developing demonstration projects in green growth (including renewable energy): a circular economy; and payments for ecosystem services.

From Calon Cymru Network’s point of view, ‘green growth’ should be defined carefully to accord with the Well-being of Future Generations (Wales) Act, notably the objectives for a prosperous Wales and a resilient Wales:

- **A prosperous Wales** - An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.
- **A resilient Wales** - A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).

Green growth therefore has to recognise the limits of the global environment and foster healthy functioning ecosystems. Long-term forestry management, rather than clear logging; agriculture and horticulture with concentration on improved soil quality; and renewable energy generation which does not demand thousands of tons of concrete, are good candidates. Welsh Government policy accords high importance to a low-carbon economy and has done so for many years. The Climate Change Strategy for Wales 2010 refers, as one of the key areas, to “ensuring that land use and spatial planning promote sustainable development and enable a move towards a low carbon economy which takes account of future climate impacts.”<sup>38</sup>

A circular economy uses resources for the maximum time, minimises waste and recycles to maximum extent. Financially, a circular economy benefits the community by circulating money locally instead of exporting it to remote shareholders.

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<sup>37</sup> Published by the Welsh Government in May 2017 as a report of the Working Party on Future Landscapes, chaired by Lord Dafydd Elis-Thomas AM, formerly of Plaid Cymru but now Independent.

<sup>38</sup> Climate Change Strategy for Wales, Summary Version, Welsh Assembly Government, October 2010, p.4.

Payments for ecosystem services are more problematic. The idea is to pay landowners for land uses such as rainwater absorption zones, helping to slow run-off into rivers and thus cutting the risks of severe flooding downstream. Carbon sinks, wildlife protection zones and soil protection practices can all be classed as ecosystem services. One negative aspect is to reward landowners for abstaining from environmental damage, an arrangement which may increase land price escalation. When land is managed sustainably, as in a permaculture system, run-off is slow, soil is protected, and diverse habitats flourish. These features generally apply to One Planet Developments and would be extended to Rural Exception Sites with allotment and orchard areas.

#### **2.4.2 Relevance to the Calon Cymru Project**

A 'hard Brexit' without agreements on agricultural trade or subsidies would threaten an apocalypse for Wales's farmers, some of whom would almost certainly decide to leave their businesses, despite the fiscal benefits of owning farmland. This could decrease the price of land. If land prices declined, sites would be more affordable for settlement-edge Rural Exception dwellings, as well as for One Planet Developments, but compensation for farmers, perhaps through a business exit scheme, would also need to be considered.

### **2.5 The County Frame**

#### **2.5.1 Expanding the role of the Heart of Wales railway**

Carmarthenshire, part of the West Wales region, has three main urban areas: Llanelli, Carmarthen and Ammanford, with populations of approximately 44,000, 17,000 and 15,000, together about 76,000 of the county total of 185,000 (2015 figures). The smaller towns, villages, hamlets and isolated dwellings of the rest of the county have some 109,000 people.

The mainline railway crosses the southern edge of the county, passing through Llanelli on the way to Whitland and then to branches on to Pembroke Dock, Milford Haven or Fishguard. Llanelli is the terminus for another line, the Heart of Wales railway, which travels north-east across Wales to Craven Arms in Shropshire and then to Shrewsbury. This line escaped closure in the Beeching cuts of the 1960s, and is now a popular tourist attraction as well as a link between main lines. The Heart of Wales Line Development Company (DevCo) -- incorporating the Heart of Wales Line Forum which is composed of Swansea City Council, Carmarthenshire and Powys county councils in Wales, Shropshire County Council in England, and representatives for the rail industry, tourism, and line users -- has a budget of about £38,000 for 2017-18. This has to pay for two development officers as well as for projects. The financial support for promoting the line, and the communities along it, has shrunk: in 2000, before DevCo was formed, the Forum had an annual budget of around £80,000, which excluded administration costs, met at the time by the



sponsors. The development officers, who job-share, are members of Calon Cymru and a Calon Cymru member is a director of the Heart of Wales Line Development Company.

Calon Cymru and DevCo argue that making more use of an established railway line is a more sustainable way forward than widening existing roads and building new roads.

### **2.5.2 One Planet Development in Carmarthenshire**

Carmarthenshire as a local planning authority has experience of One Planet Development, for example at Rhiw Las near Whitland. In this case, the planning officer recommended approval, councillors on the planning committee disagreed, the case went to appeal, and the inspector, agreeing with the planning officer, allowed the project to go ahead.<sup>39</sup> Training provided by the One Planet Council has improved knowledge levels among planners and applicants. Rhiw Las, an eco-hamlet of four smallholdings, has extended awareness in the county that a One Planet Development can apply to more than a single household. Calon Cymru Network's idea for a sustainable neighbourhood on One Planet principles is a logical expansion of the concept.

### **2.5.3 Carmarthenshire County Council as Landowner**

Carmarthenshire County Council owns land in and near Llandovery which would be suitable for a 'sustainable neighbourhood' (see 1.7 above). The land is let for grazing, and the tenant of the main 59-acre block wishes to retain the land within the family farm business.

Council officers are obliged to seek best value, which is normally market value. Councillors can transfer assets to community organisations if the council's revenue budget would benefit. Community asset transfer is popular for parks and sports grounds (and there are current examples in Llandovery and Llandeilo) but transfer of land for One Planet Development is outside this model and more complex to justify, especially if local people are not the main beneficiaries.

### **2.5.4 Relevance to the Calon Cymru Project**

The local planning authority owns suitable land within easy walking distance of public transport. Best value rules mean that the county council could, perhaps, not justify a cheap land disposal for a One Planet Development, but a Rural Exception Site is a different matter and negotiation with the county council over a community asset transfer of a portion of its land should have a greater chance of success. Homes on one or more Rural Exception Sites would be for local people, enabling them to stay in their home area. It would also be part of the plan to accompany settlement-edge housing with community food production and access to small business units – paying

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<sup>39</sup> See <https://westwalesnewsreview.wordpress.com/2016/07/04/inspector-contradicts-councillors-over-one-planet-eco-hamlet/>



attention to sustainable livelihoods as well as to affordable homes. Land further from settlement can be purchased on the open market for self-build OPDs.

The process for community asset transfer is not always clear to the public. If the concept of community benefit could be clarified within local authorities and other public sector organisations, this should help community groups to develop proposals which incorporate land transfer.

## 2.6 The Local Frame

### 2.6.1 Exodus of Services from Llandovery

Llandovery, an ancient town granted a charter by King Richard III in 1485, has an official conservation area marked by its Georgian buildings. The town has many architectural attractions, documented by Alfred Theodore Arber-Cooke in *Pages from the History of Llandovery*.<sup>40</sup> Popularity with visitors has not been enough, though, to stem the exodus of public services:

- Royal Mail sorting office, closed March 2011
- HSBC Bank, closed June 2014
- NatWest Bank, closed November 2015
- Pantycelyn state comprehensive school (which had a sixth form), closed February 2016
- Lloyds Bank, closed March 2017

The sole remaining bank, Barclays, is open three days a week.

The closed services all provided employment, and in the absence of replacements, there is no incentive for the working-age population to expand. In the Llandovery local government ward 27% of residents are aged 65-plus (mid 2015 figures), compared with 22.7% across Carmarthenshire as a whole. Only 18.2% were aged 25-44, against 21.7% across the county.

State pension claimants in Llandovery ward totalled 745 in May 2016, 28.5% of the total, highlighting the unbalanced age profile. Median incomes in 2016 were modest, £20,848 per household according to CACI PayCheck data quoted by Carmarthenshire County Council in the ward profile. This was the 8<sup>th</sup> lowest of the 58 wards in the county, which itself is in a poor area of the EU. (see 2.4.1 above)

Llandovery ward has 2,628 residents (mid 2015). The surrounding wards are also lightly populated: Cilycwm had 1,463 people and Llangadog, 2,628. The population density across the three wards, total area 435.4 sq km, is just 13.75 persons per square km. Llandovery is their 'town centre', classed as one of Carmarthenshire's six

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<sup>40</sup> Published in two volumes by Friends of Llandovery Civic Trust Association in 1975, second edition with additional volume published by Llandovery Civic Trust in 1994. Second-hand volumes sometimes available.

second-tier 'town centre' settlements,<sup>41</sup> after the three main urban areas of Llanelli, Carmarthen and Ammanford.

In all three wards of Llandovery, Cilycwm and Llangadog, the main employer – according to the council's own ward profiles -- has been Carmarthenshire County Council. There are no large private-sector employers, apart from the public school Llandovery College, which in the year to August 31 2015 employed 77 teaching staff and 43 support staff for around 300 pupils. These jobs, and the presence of the pupils, are important to Llandovery. The town's unbalanced, elderly demographic profile and low median household income are not incentives for either private-sector employers, or goods and services suppliers, to operate in the town.

### 2.6.2 Relevance to the Calon Cymru Project

New residents keen to live according to One Planet principles are likely to be young and energetic, creating economic opportunities for themselves and in time for other people. They would contribute to rebalancing the demographic profile and to the creation of a more diverse economic base.

Homes on one or more Rural Exception Sites would be for local people, enabling them to stay in their home area. It would be part of the plan to accompany housing with community food production, solar energy, and access to small business units. They would not be formal One Planet Developments but buildings would be low carbon or preferably zero carbon.

The project would need to be sensitive to the rural culture and linguistic heritage of the area. One way to help bridge the gap between incoming One Planet Development enthusiasts and the established farming community would be for agricultural colleges to increase courses in commercial horticulture and agroforestry, and to promote these courses within their catchment areas.

## 2.7 Appropriate Civilisation

The international and national contextual frames indicated above include many negative aspects. They correspond with warnings issued by international organisations such as the World Bank (see 2.1.1), United Nations' Food and Agriculture Organisation's 2017 report *The Future of Food and Agriculture: Trends and Challenges*, and the Doomsday Clock of the Bulletin of the Atomic Scientists, which in September 2017 was at 2½ minutes to midnight.

The underlying context can also be viewed through the prism of 'Appropriate Civilisation', a concept developed by Dr Jeremy Leggett, founder and a director of Solarcentury, a solar technology company which has installed solar power generation systems around the world. He is also chair of both Solaraid, a charity to

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<sup>41</sup> The other 'town centres' are Burry Port, Llandeilo, Newcastle Emlyn, St Clears and Whitland.

facilitate uptake of solar lighting in Africa, and the Carbon Tracker Initiative. He argues that 'Appropriate Civilisation' encompasses seven strands:

1. Action to mitigate climate change
2. Transition to renewable energy
3. Technology to benefit society as a whole
4. Commitment to truth in politics
5. Greater equality between and within nations
6. Reform of market capitalism to reduce the risks of financial collapse
7. International efforts to resolve political problems peacefully

Calon Cymru's proposal addresses strands 1, 2 and 3, the latter by using materials and construction methods which limit or counteract adverse environmental impacts. Calon Cymru also seeks to contribute to strand 5 by improving access to affordable housing and to land-based enterprise.

## Section 3 The Land Conundrum

“Land is an inherently scarce but vital resource upon which all economic activity is dependent. Until we properly recognise this simple fact and everything that follows from it we will never create a fairer, more efficient and more sustainable economy”

*(Rethinking the Economics of Land and Housing, by Josh Ryan-Collins, Toby Lloyd and Laurie Macfarlane, p.223)*

### 3.1 Land Costs Make Housing Unaffordable

“Affordable housing is possible only with public subsidy,” said one housing officer.

Land prices are the reason. Carmarthenshire, the location for Calon Cymru Network’s project, may be one of the poorer areas in the European Union but land with outline planning permission is beyond the reach of most private individuals. One acre at Five Roads near Llanelli, with permission for 13 homes, was marketed at £700,000 in May 2017, an average of £53,846 per plot. One of eight plots in the pretty village of Llanarthne in the Tywi valley was on offer at £110,000. In Caio, in the hills of north Carmarthenshire, a single plot was advertised at £79,950.

Add these prices to typical construction costs, and the total escalates beyond affordability for people on typical local household incomes of around £20,000 a year. So how much might a small, brick, 3-bedroom, 1-bathroom, 140 square metre house cost? The figures in the table below are from the calculator at ‘Build It’ (self-build.co.uk) on May 22 2017.

**Table 2 Contractor and self-build costs of new homes in Wales, 2017**

<b>Brick construction</b>	
House with attached single garage, contractor built in Wales, standard finish	£202,020
75% contractor built, 25% self built	£175,831
25% contractor built, 75% self built	£123,323
<b>Timber framed construction</b>	
House with attached single garage, contractor built in Wales, standard finish	£211,561
75% contractor built, 25% self built	£184,063
25% contractor built, 75% self built	£128,929

The figures exclude professional fees, VAT on fees and purchased materials, insurance, borrowing costs – and the cost of the land.

According to ‘Build It’, a timber-framed house, with all other features the same as in the brick-built house, is 4.7% more expensive if contractor built or 25% self-built, and

4.5% dearer if 75% self-built, before taking into account VAT, fees, and the crucial factor of the land on which homes are built.

The chasm between local incomes and land and construction costs is clear. On this basis, even a brick property which is 75% self-built would demand over £220,000 when land (at, say, £75,000) and VAT are included.

Eco features such as photovoltaic panels add £8,000, and a ground source heat pump with underfloor heating, another £17,000.

There is a disconnection between median local incomes and housing costs. Median incomes in Llandovery in 2016 were £20,848 per household, compared with £23,825 for Carmarthenshire as a whole. The median price in April 2017 was £133,000.

The construction elements of a new home are amenable to trimming by choosing non-standard materials (although mortgage lenders may object) and by shrinking the footprint area, but the land cost is hard to reduce.

Architects in Calon Cymru have developed pre-fabricated designs with lower costs (see 4.7.4, 4.7.5, 4.7.6). This approach to the affordability problem is welcome but does not influence the underlying land price. The UK Government's Help to Buy policy arguably does nothing to reduce land prices because it subsidises developers' cash flows. Help to Buy Wales allows applicants to put down a 5% deposit, take out a 75% mortgage, and benefit from a government equity loan of 20%, interest free for five years. There are price limits, £300,000 in Wales and £600,000 in England, indicating that the help is not for people who cannot afford any open-market property, but is assistance for volume house builders selling middle-of-the range estate homes.

The Help to Buy ISA (Individual Savings Account) is less prescriptive. Government promises to augment an individual's savings by 25%, up to a maximum of £3,000. One anticipated benefit for government when households switch from renting to buying is less pressure on Housing Benefit, for which mortgage-payers do not qualify.

### 3.2 Why is Land so Expensive?

With the exception of land claimed from the sea as in the Dutch polders, the supply of land is fixed so that pressure on it increases as the population expands. Several other factors add to the pressure:

- Planning controls
- Fiscal policy
- The Common Agricultural Policy

### 3.2.1 Planning Controls

Government efforts to restrict development in the countryside have created the planned approach, with zones for each type of land use, from residential housing to agricultural. The core idea is to protect farmland, and to build on brownfield (previously developed) sites rather than on easier and often more straightforward greenfield sites.

In Carmarthenshire, the Local Development Plan (LDP) set tight development limits for all but the three main towns of Llanelli, Carmarthen and Ammanford. Llandovery had only three sites marked for new housing, for 111 homes in total:

- |           |                                  |                        |
|-----------|----------------------------------|------------------------|
| • T2/3h1  | North of Dan y Crug, Brecon Road | 60 homes               |
| • T2/3h2  | New Road                         | 6 homes                |
| • T2/3mu1 | Ysgol Pantycelyn                 | 45 homes <sup>42</sup> |

The paucity of sites is due in part to geographical limitations. Much of the town is at risk of flooding. The rivers Gwydderig and Bawddwr flow into the Bran which enters the Tywi: Llandovery is riverine. Higher land outside the town is beyond the settlement limits as drawn in the LDP.

Land adjacent to settlement limits has potential, as Rural Exception Sites, to be designated for affordable housing. The problem here is that landowners expect full development value if their site is to be used for housing, affordable or not, unless they are inclined to be philanthropic. While philanthropists exist, they are scarce.<sup>43</sup> In Carmarthenshire, the only affordable homes built on Rural Exception Sites have been on land already owned by the applicant's family.<sup>44</sup>

The Welsh Government and local authorities try to grapple with the problem of housing shortages in rural areas. The appointment of Rural Housing Enablers (RHEs) was a venture of the Welsh Government intended to increase the supply. Following a pilot project starting in 2004 in Monmouthshire and South Powys, more RHEs have been appointed, funded by local authorities, housing associations and national park authorities as well as by Welsh Government. The RHEs work with local communities and organisations able to supply housing, to try and provide homes for which communities have identified a need.

Their tough task is summarised in these quotations from 'An Evaluation of the Rural Housing Enablers in Wales Final Report':

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<sup>42</sup> This site has since been removed, see 3.3.2 below.

<sup>43</sup> The Hockerton Housing project in Nottinghamshire, instigated in 1993, has attracted considerable media attention because the five homes there are earth-sheltered and energy-efficient. The homes benefit from a 6kW wind turbine and a 7.65kWp photovoltaic array, and from community food production on the 10.5 acre site. Land acquisition was not an issue for the project founders, though. Landowner Nick Martin was keen on the project and participated in it. There is no requirement for homes to be affordable, either, and no cap on resale prices. A 4-bedroom Hockerton home was advertised in autumn 2014 for £500,000, for example. The Ecology Building Society and the Co-operative Bank supplied funding for construction.

<sup>44</sup> Email from Matthew Miller, Housing Needs Lead, Carmarthenshire County Council.

“This evaluation has revealed that barriers which are out of the hands of the RHE hinder delivering rural affordable homes, which is the ultimate objective of the RHE project. Most significantly, it is perceived that the limited amount of SHG (Social Housing Grant) and low Acceptable Cost Guidance<sup>45</sup> (ACG) that do not take account of the costs of developing rural schemes that is holding back supply. Coupled with this in most areas is the lack of sites, a combination of landowner expectation on price, out of date Local Plans and the state of the local housing market. There was also a concern that local authorities are not releasing sites at a price that makes it possible to provide affordable housing, even though this is often a corporate priority.”

(An Evaluation of the Rural Housing Enablers in Wales Final Report, Welsh Government Social Research Report 7/2014, p.4 paragraph 1.4)

“.... gaining data on affordable housing in rural communities is almost impossible. The only information was that provided by six RHEs. It confirms that to date delivery has been low. Since 2004 when the first RHE came into post 186 units have been delivered. However, what is noticeable is that 89% of these have been delivered in the three areas where an RHE post has existed for the longest period of time. More encouragingly, since 2011 RHE activity has resulted in a pipeline of 28 schemes that have the potential to deliver a minimum of 240 units.”

(An Evaluation of the Rural Housing Enablers in Wales Final Report, p8 paragraph 1.22)

The Rural Housing Enablers struggle to find land, and struggle even harder to identify land at a low enough price for affordable homes on it to be truly affordable.

For development further out in the countryside, there are four main possibilities. The first three have to meet financial tests according to traditional commercial criteria:

1. New dwellings on established rural enterprises
2. Second dwellings on established farms
3. New dwellings on new enterprises
4. One Planet dwellings

For a rural enterprise dwelling, the applicant has to prove that the enterprise requires them to live on the premises, and that the enterprise is capable of supporting them financially. The financial proof aspect means that applicants often have existing businesses that are expanding, rather than ideas for a new enterprise.

One Planet dwellings are the result of the Welsh Government's innovative One Planet policy<sup>46</sup> which allows development in open countryside provided strict conditions are met and adhered to. The purpose of the policy is to encourage ecologically sustainable smallholdings with buildings of local renewable materials and energy generated from renewables. A One Planet household has to provide at

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<sup>45</sup> Acceptable Cost Guidance, <http://gov.wales/docs/desh/publications/150401-acceptable-cost-guidance-en.pdf>, is limiting but not impossible. See 4.7.4 to 4.7.6, below.

<sup>46</sup> 'One Wales: One Planet: the sustainable development scheme of the Welsh Assembly Government', May 2009, and 'One Planet Development Practice Guidance', for the Welsh Assembly Government by Land Use Consultants and the Positive Development Trust, October 2012. See 1.1 above.

least 30% of its basic needs directly from the land, and the balance up to 65% indirectly, for example from education, tourism and crafts.

The One Planet life is hard work, and demands fitness. If a key household member becomes ill or frail, and has to retire, currently there is no clear mechanism for them to stay in their home if they are failing to meet the 65% threshold.

A market in potential One Planet sites has begun to emerge, offered at a premium to agricultural value. Woodlands.co.uk advertised 11 acres near Builth Wells, Powys, in July 2017, “suitable for One Planet Development ....in two lots of four to seven acres each. This would ideally suit two families who wish to develop the site together. At the moment this land is exclusively being offered for One Planet projects”. The land, split between pasture and woodland, was offered at £9,000 an acre. While a direct comparison is not possible, this is approximately 10%-15% more than a typical 2017 price for mixed woodland and 20% to 50% more than for improved grassland, but reflects the value gain that could be achieved with permission to build a One Planet dwelling.

The advert suggests the site could be suitable for two families. One of Calon Cymru’s concerns is to investigate the practicality of meeting the ‘65% of basic needs’ criterion on a communal, rather than individual household basis. This is considered below in Section 5, Obstacles and Challenges.

### 3.2.2 Fiscal Policy

Land ownership is well protected by the UK’s taxation system, which gives farmland and woodland valuable exemptions and therefore over time increases the capital resources gap between landowners and non-owners. The fiscal benefits of land ownership are so great that owners can be persuaded to part with it only for prices that are many multiples of its annual productive yield.

Farmland owners can qualify for exemptions from Inheritance Tax and, by reinvesting sale proceeds, from Capital Gains Tax. These exemptions, the fact that supply is fixed, and the UK’s relatively stable political and legal environments, encourage investors from all over the world to shelter capital in UK farmland, despite the frequent poor financial returns from crops and livestock raised on that land.

Net farm incomes in Wales in 2015-16 averaged £11,000, according to *Agriculture in the UK 2016*.<sup>47</sup> Almost four Welsh farms in ten, 38%, had net farm income of less than zero, and another 10% recorded between £1 and £4,999. Only 8% achieved £50,000 or more. The pattern was similar over the rest of the UK. Net farm income, which includes subsidy receipts, is “management and investment income, less paid management, plus the value of the manual labour of the farmer and his wife [*sic*]. It

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<sup>47</sup> Published in 2017 by the Department for Environment, Food and Rural Affairs, the Department of Agriculture, Environment and Rural Affairs (Northern Ireland), the Welsh Assembly Department for Rural Affairs and Heritage and the Scottish Government’s Rural and Environment Science and Analytical Services.



represents the return to all tenant's type capital and the reward to the farmer for his [sic] manual labour and management".<sup>48</sup> Tenant's capital covers machinery, breeding livestock, crops, stores and everything else on a farm except land and fixed equipment.

Subsidies are vital to the survival of all but the most fortunate farms in Wales. The *Wales Farm Income Booklet 2015/16 Results*, from Aberystwyth University, says:

"Farmers are often unfairly criticised for crying wolf however, it's difficult to see how many Welsh farms can currently produce food economically without relying on significant non farming income and timely BPS [Basic Payments Scheme] payments."

Direct subsidies to farmers in Wales totalled £269 million in 2015-16.

Yet the total income from farming in Wales was just £157 million.<sup>49</sup>

Total income from farming is the income left to farmers after the deduction of all costs including interest, rent and labour costs.

So without the subsidies from the EU, Wales' 35,200 farmers would have lost £112 million overall.

The annual monetary value of agricultural and horticultural produce per acre has nothing to do with current land values, which are strongly influenced by investment and taxation factors. Farmland buyers are usually wealthy enough to use cash, not mortgages. Savills' UK Agricultural Land Market Survey 2016 reports:

"Cash, in almost 80% of transactions, remains the predominant source of purchasing funds. This includes rollover proceeds, which was the source of funds used by 7% of buyers. We expect this to increase as post recession development activity increases." (p.5)

Savills also analysed the cohort of buyers:

"Farmers made up the smallest proportion of buyers since 2003 – at 43% of all transactions. Meanwhile, non-farmers including lifestyle buyers, investors and institutional/corporate buyers represented the biggest percentage of purchasers in the past 12 years. Expansion of an existing holding was the principal motivation to buy, representing the predominant reason in more than half of all transactions, with three-quarters of those farmers who took on more land citing expansion as the reason to buy." (p.3)

These facts and figures prompt several questions:

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<sup>48</sup> Definition from *The Farm Management Pocketbook* by John Nix, 42<sup>nd</sup> edition, Agro Business Consultants Ltd.

<sup>49</sup> This figure and the direct payments total are from *Agriculture in the United Kingdom 2016*, tables 10.3 and 3.2.

- \* What will happen to farmers' incomes after Brexit, especially if there is no deal and product exports are restricted by high tariffs (see 3.2.2 above), and at the same time the UK Government refuses to provide full compensation?
- \* If farmers are suffering mass bankruptcies, will land retain its value? Will it be considered a safe investment even if there is no one to manage it? Could there be a corporate takeover of land?
- \* What would be the impact on UK food supplies?
- \* What would happen to insolvent farmers?

Calon Cymru Network is aware of these alarming questions, and believes that its proposals can contribute to a re-thinking of the rural economy.

Josh Ryan-Collins, Toby Lloyd and Laurie Macfarlane, in their 2017 book *Rethinking the Economics of Land and Housing*,<sup>50</sup> argue that the fixed nature of land means that it does not fit into mainstream economic theories:

"The fixed supply of land for particular uses means it does not fit easily in mainstream, economic theories where supply and demand set prices in a free market." (p.11)

"If demand for land increases, the price goes up without triggering a supply response." (p.12)

"...as the economy grows, landowners can increase the rent they charge non-owners to absorb **all** the additional value that their tenants (such as workers, shopkeepers and industrialists) generate." (p.12, author's emphasis)

The very immobility of land makes it ideal as collateral and thus places it at the heart of the financialised economy:

"Owning land.... -- with secure title, and the right to sell it on to whomever you wish – is essential for it to be used as collateral for loans. Without these features, no lender would accept land as security, as it could not be sold to repay the debt in the event of the lender having to foreclose on the borrower. Once owners had clear and transferable land titles, supported by detailed surveys, standardised measurements and recognised legal institutions, it opened the way to vastly expand the creation of bank and other forms of credit." (p.21)

The utility of land as collateral, apart from its use value, means that owners seek to apply heavy political and legal power to protect their possession.

In addition, the supply of land for development is limited artificially by national governments designating protected zones such as green belts and by local governments in their development plans. Limitation of supply is the main price accelerator for development land. Developers themselves intensify price gains by accumulating substantial land banks:

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<sup>50</sup> Published by Zed Books.

“...it is estimated that 82% of all the land held by developers is strategic (i.e. without planning permission).... Developers often control strategic land via the use of options agreements, which are private contracts with landowners such as farmers, and are generally not publicly disclosed.” (Ryan-Collins, Lloyd and Macfarlane, p.97)

The Welsh Government's introduction of a Land Transaction Tax to replace Stamp Duty increases the threshold for tax paid by land buyers from £125,000 to £150,000 from April 2018. Buyers of commercial property, including land, for over £1 million face a tax rise of one percentage point to 6%. For people trying to buy small homes and small plots, the tax change is beneficial. Vendors of large blocks of land may be more inclined to break it up into small parcels, to reduce buyers' tax burden.

### 3.2.3 The Common Agricultural Policy

The Basic Farm Payments system under the European Union's Common Agricultural Policy rewards farmers for holding land, more or less regardless of what they are producing on it. Area payments in 2016 were typically about £214 per hectare, including the environmental 'greening' element. Upland areas above 400 metres received less, about £56 per hectare, again including the greening payment. Young farmers (aged 18 to 40) can qualify for additional payments.<sup>51</sup>

The subsidy system, added to the other advantages of owning farmland, discourages landowners from parting with it even for socially desirable purposes.

Brexit is a looming cloud. If, as expected, the UK exits the EU on March 29 2019, the subsidy future is likely to diverge from the continental model. Given recent UK governments' lack of concern for domestic food production, subsidies could shrink or even, as in New Zealand in 1984, disappear. That would probably impact negatively on the price of land, especially poor land on which subsidy is a leading component of farm income.

At the time of writing Brexit negotiations have barely started, and landowners' responses to future circumstances are unknown. Landowners are aware that change is coming, but until it does, their attitudes to holding land are unlikely to change.

### 3.2.4 The Myers Case

The 'New Towns' like Harlow, Basildon and Bracknell, built in the years following the Second World War, would probably never have been built if the sponsoring development corporations had needed to buy land at its development value. Instead, the development corporations were able to compulsorily purchase land at its agricultural value. They captured the whole value uplift.

This stopped after the Myers case of 1974. The judgement in Myers versus Milton Keynes Development Corporation, made by Lord Denning, Master of the Rolls, was instrumental in making compulsory purchase far more expensive and protracted. He

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<sup>51</sup> Rural Payments Agency figures, converted from Euros at the stated rate of €1 to £0.85228: <https://www.gov.uk/government/news/rural-payments-agency-confirms-entitlement-values-for-2016-basic-payment-scheme>, accessed June 3 2017.

ruled that landowners had a right to share in the increase in land value post-development. This created new work for lawyers, presenting opposing sides in value disputes, and marked the end of the post-war era of well-built social housing on generous plots. The rising cost of acquiring land influenced Margaret Thatcher's first government (1979-93) to abandon, in 1980, the Parker Morris standards which a fellow Conservative government had adopted in 1963. Parker Morris standards set minimum space requirements for social housing and reflected the 1960s optimism for higher living standards for all.

"These days we use compulsory purchase only for a small parcel of land within a proposed developed where the rest of the land has been acquired," said a local government officer.

Now, land for development cannot be acquired compulsorily at agricultural value. Even agricultural value is inflated far above productive value because of its fiscal and subsidy attractions, as summarised in 3.2.2 above.

### 3.3 Land around Llandovery

#### 3.3.1 Land Owned by Farmers

Requests to farmers' organisations -- the National Farmers' Union and the Farmers' Union of Wales -- for landowners interested in providing land for Calon Cymru Network's proposed 'sustainable neighbourhood' have, at the time of writing, not yielded any possibilities. However, the site at Dolau Fields (9.3.2 below) is farmer-owned and a real possibility for affordable housing.

#### 3.3.2 Farmland Owned by Carmarthenshire County Council



*Llanfair Church from the 59 acres of county council-owned Allt Gilfach, Llandovery. The Heart of Wales railway is between this site and the church.*



*The Allt Gilfach land slopes gently up from the Llandovery to Cilycwm road.*

A 59-acre site just outside settlement limits, owned by Carmarthenshire County Council. is let on a 10-year agricultural tenancy with about three years still to run. The tenants are adamant that the land, east of Cilycwm Road, is an essential part of their farming business and they want to retain the use of it. They believe that the landowner is not the county council but the Royal British Legion. However, the county council confirmed its own ownership to Calon Cymru.<sup>52</sup>

The county council also owns a former playing field, part of the town's closed comprehensive school, east of the Cilycwm Road and between the Heart of Wales railway and houses within the town. This land has a history of poor drainage and Dyfed Archaeological Trust says a Roman road crosses it.

There is a mismatch between landowners' price expectations and developers' willingness to buy it. The Dolau Fields site, adjoining a row of houses called Dan y Crug on the A40 immediately east of Llandovery, first received planning permission in 1991 but has remained undeveloped. This site is included in the current Local Development Plan as the location for 61 new homes, 12 of which would have to be 'affordable'.

The other LDP housing sites in Llandovery are smaller: possibly 45 homes on land at the closed comprehensive school, Ysgol Gyfun Pantycelyn, and six on a site in New Road. Since the LDP was published, the county council has withdrawn the Ysgol Gyfun Pantycelyn site, following a decision to transfer the town's primary school to the closed comprehensive school.

In the Llandovery area, what does 'affordable' housing mean?

<sup>52</sup> Email from county council valuer Philip Davies, May 8 2017.



**Table 3 Maximum price of affordable housing in the Tywi area of Carmarthenshire, including Llandovery, year to November 2017**

Median household income £	One bedroom flat £	2 bedroom flat/ house £	3 bedroom house £	4 bedroom house £
26,385	55,548	69,435	83,322	97,209

Source: Carmarthenshire County Council

These reference prices are three times median incomes for different household sizes, plus 5% for a deposit, and so are not related to open market prices. The LDP stipulates that a proportion of new homes on any site must accord with the official definition of 'affordable', i.e. no more than 80% of the market rent or purchase price, which in the case of Llandovery would be about £140,000 for a 3-bedroom house and £63,000 for a 2-bedroom, based on median values quoted on home.co.uk on June 5 2017. The discounted market price for a 2-bedroom home was thus lower than the 'affordable' price, although that was not the case for 3-bedroom homes. The town has a plentiful supply of small 2-bedroomed terraced cottages, which are less popular than 3-bedroom bungalows with the retirees who favour the town.

In Llandovery the proportion of affordable homes required on new developments is 30%.<sup>53</sup> At the time of writing, though, no new homes on development sites were under construction.

### 3.3.3 Almshouse Charity of Letitia Cornwallis

Four miles south-west, at the village of Llanwrda, also on the Heart of Wales railway, the Almshouse Charity of Letitia Cornwallis owns three-and-a half acres in the village, comprising the closed village school, five empty flats (four 1-bedroom and one 2-bedroom) and an occupied flat in a Georgian building in need of major renovation, a playing field, and the village hall and car park. The hall and its car park, about one-fifth of the total area, are leased to the village hall committee for 99 years. The Cornwallis charity is negotiating with two housing associations, Tai Ceredigion and Bro Myrddin, but both suggest that the Georgian building, which is listed, would be too costly to renovate for affordable homes for local people (the purpose for which it was built in the 18<sup>th</sup> century). Estimates for renovation have been in the region of £650,000, or more than £108,000 per flat.<sup>54</sup>

This Llanwrda site (see 9.3.3 below) is large enough for six to eight new homes plus communal green space with food-growing capability. Architects are divided over whether the Georgian building could be renovated economically for housing of modern standards. The entrance drive, leading off a quiet, wide village street (the A40 before a bypass was built), is single track along the east side of the playing field, and could be widened to include passing places. Llanwrda railway station is only

<sup>53</sup> Supplementary planning guidance, Affordable Housing, Carmarthenshire County Council, adopted December 2014, p.23.

<sup>54</sup> Discussion with Carwyn Jones, secretary to the charity, May 10 2017.

600-700 metres' walk, but lies across the A40 Llanwrda bypass which lacks a pedestrian crossing.

### 3.3.4 Landowners Prepared to Wait

Owning farmland can be without tax implications until it is sold or the owner dies (3.2.2 above). Additionally, farmland and buildings are normally exempt from business rates. Given the minimal cost of holding the asset, many landowners are happy to retain land over the long term, even if they have no particular use for it. It is for this reason that some economists<sup>55</sup> favour an annual land value tax, but the potential drawbacks are significant and include the difficulties of valuing land (and not structures on it), and keeping valuations up to date; the plight of income-poor people who happen to own land but cannot find a buyer for it; and the ever-present problem of exemptions. Would farmland be exempt? If not, farmers' organisations would be protesting. If yes, there would be a temptation for owners of other land to claim farmland status to avoid tax. There is a case for taxing land value once there is outline planning permission for it, but you do not have to own land before applying for planning permission on it. There might be cases where the landowner would have to pay land value tax because someone else had applied for and received planning permission!

Would a land value tax have brought forward land for development in Llandovery? Impossible to answer directly, but the rate of tax would be influential. A rate of 1% of its unimproved value is sometimes suggested. If the valuer quoted £5,000 an acre, 1% would be £50 a year, really not enough to prompt the disposal of a small site.

Finland is among the European countries to levy a land value tax:

"For land with buildings, the tax rate was levied at between 0.5 and 1.0 per cent of the land value. Exceptions exist, with lower tax rates for land with permanent housing and higher taxes for uses such as summer cottages.

"The most recent amendment [to the system] also contains a new section providing for a special 'penalty tax' on vacant lots in urban areas, raising their tax rate to 1.0 to 3.0 per cent, representing at the highest end a trebling of the normal tax. The purpose, of course, is to bring such lots into the market or spur their owners to develop them." (*Tax Trial: a Land Value Tax for London?* London Assembly Planning Committee, February 2016. p.15)

The Dolau Fields site, immediately east of Dan y Crug on the A40 road, has featured in planning authority deliberations since 1991 but remains undeveloped. An annual tax of, say, 1% on its agricultural value would be a weak inducement for development, but 1% on development value would be painful.

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<sup>55</sup> The American economist Henry George (1839-1897) discussed the potential for a land value tax in his 1879 book *Progress and Poverty*. In modern times, Milton Friedman (1922-2006, one of the economists who most influenced Margaret Thatcher) called land value tax the 'least bad tax'.

The site is less than a mile from the town's railway station and just over half a mile from the central bus stop in the municipal car park, and so fulfils the criteria for access to public transport. The location is not currently attractive to major developers, though, because Llandovery is no longer a thriving economic centre.

Back in 1991, on September 24, outline residential permission was granted, and was renewed on October 19 1995. In 1998, permission for a retail foodstore was sought but refused. Meanwhile, the residential permission was renewed again in 1998, 2001 and 2004, but no building took place. In September 2014 owners LR and HM Lewis and IR Lewis, of Dolaugwynion Farm, received a new permission for 61 homes, including 12 'affordable', 20% of the total, the work to start within five years.

For a private-sector developer, the requirement for 20% of homes to cost 20% less than the open-market figure is a challenge, especially in areas like Llandovery where open-market sales are not buoyant.

In seeking to provide low-impact affordable housing, Calon Cymru or a land trust set up for the purpose could assume that responsibility from a commercial developer. The responsibility is onerous and demands considerable pre-application work:

"Developers will be required to enter into a legal agreement with the Authority to allow a contribution to be made towards affordable housing, whether through on-site affordable housing development, or through commuted sums. The Council welcomes pre-application discussions to ascertain the level of contributions, and it is advisable to submit the following information in order to avoid unnecessary delays with the processing and determination of a planning application.

- Certificate of Title – proof of ownership of all the property and/or land affected by the application site edged red, because planning obligations run with the land, all owners, lessees and mortgagees must be signatories;
- Details of the solicitor that will be handling the case;
- Any valuation to prove eligibility for reduced contributions, accompanied by information detailing how costs were derived;
- All other requirements outlined by the application form checklist."

(Affordable Housing Supplementary Planning Guidance, Carmarthenshire County Council, adopted December 2014, paragraph 7.1)

Could Calon Cymru Network acquire and develop the whole site on its own? The answer is no. Operating as a developer of 61 homes is outside the conceptual parameters of CCN, which aims to foster integrated economic regeneration in the Heart of Wales Line corridor, based on renewable resources and prominently featuring food, timber and energy production and dwellings in small clusters rather than concentrated on estates.



Integrated development includes housing, employment, transport, digital communications, public and community services, and management of natural resources. A volume housing project would prioritise one component of regeneration above the others and thus not be a good fit for Calon Cymru itself.

Yet the landowners and their chartered surveyor came up with an idea – for a separate venture to construct the affordable homes, which would (a) show that development was proceeding on the site and (b) free a commercial developer from the obligation to construct any affordable homes.

The next stage, the first recommendation of this study, is to establish a local community land trust able to achieve affordable homes on this site.

# Section 4 Increasing the Supply of Affordable Rural Homes

## 4.1 Selling Off the Social Housing Stock

In Wales in 2016 6,620 homes were completed – 5,410 by the private sector and 1,210 by housing associations.<sup>56</sup> That is below the number of new households by about 400 to 500. Overall, the housing shortage is not so acute in Wales as in England, where some 240,000 to 245,000 additional homes are required annually but construction falls far short. In 2015-16 only 141,740 new dwellings were started, fewer than 23% of them ‘affordable’ on the basis of availability at no more than 80% of the open market purchase price or rent, itself an arbitrary and rather meaningless construct.<sup>57 58</sup> In rural Wales there is a problem of insufficient affordable homes for new households, because the market is inflated by demand from retirees and holidaymakers.

Margaret Thatcher’s dislike of social housing, expressed in the Right to Buy policy, led to today’s dearth. The policy, for tenants of local authority and development corporation homes to acquire their homes at big discounts,<sup>59</sup> was electorally popular. Right to Buy was introduced on October 3 1980, and since then about two million local authority homes have been purchased by tenants.

With discounts on a sliding scale up to 50% after a 20-year tenancy, £100 deposits, two years to decide whether to go ahead, and 100% local authority mortgages, it was a colossal giveaway.<sup>60</sup>

In 1999 the Labour government cut the maximum discount to £25,000, but in 2012 David Cameron’s Conservative/Liberal Democrat government raised it to £77,900 in England outside London and to £103,900 in London. In 2015 the then-Chancellor, George Osborne, proposed extending the right to buy to the 2.3 million tenants of housing association properties, but also increasing rents to market levels for households with incomes over £40,000 in London and £30,000 elsewhere.

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<sup>56</sup> Local Authority Household Projections from the Welsh Government, March 23 2017, based on 2014-based projections.

<sup>57</sup> Department for Communities and Local Government, table 208, permanent dwellings started by tenure and country, updated May 25 2017, and ‘Empty Homes in England 2016’ from the charity Empty Homes.

<sup>58</sup> Figure for affordable homes in Dispatches, Channel 4, July 10 2017, ‘Secrets of Britain’s New Homes’. Steve Akehurst, head of public affairs and campaigns at the charity Shelter, reported that 75,000 affordable homes were built in 1996 but only 32,500 20 years later.

<sup>59</sup> The August 2015 issue of *Inside Housing* published an analysis based on Freedom of Information requests to 91 councils, which found that almost 40 per cent of ex-council flats sold through the statutory right to buy were now in the private rented sector.

<sup>60</sup> ‘Right to buy: a history of Margaret Thatcher’s controversial policy’ by Dawn Foster, theguardian.com, December 7 2015, tracks right to buy between 1980 and 2015.

The Scottish Government stopped Right to Buy from August 1 2016, and the Welsh Government is progressing the Abolition of the Right to Buy and Associated Rights (Wales) Bill.

## 4.2 Impact of Right to Buy

Each year there are more renters and fewer owner-occupiers. Owner-occupation in the UK peaked in 2008 at 18.184 million households but by 2014 was down to 17.712 million.<sup>61</sup> The fall in owner occupation, and the rent subsidy from public funds in the form of Housing Benefit, both reflect the affordability crisis. In 2015-16 £24.244 billion was distributed as Housing Benefit in the UK: £5.972 billion went to local authority tenants in rent rebates, £9.489 billion to tenants of housing associations and other registered social landlords, and £8.783 billion to tenants of private landlords.

The benefit is payable only to tenants paying rent, not to owner-occupiers, and in 2015-16 there were 4.777 million claimants – people whose incomes were insufficient to pay commercial rents.<sup>62</sup> The claimants amounted to almost one tenant in every two, and their average annual benefit was £5,075.

A significant proportion of all the local authority homes sold under Right to Buy (RTB) were, by 2016, calculated to be in the hands of private landlords:

“It is clear that a significant number of properties sold under the statutory RTB are now in the private rental sector. In August 2015 *Inside Housing* published an analysis based on Freedom of Information requests to 91 councils, which found that almost 40 per cent of ex-council flats sold through the statutory RTB were now in the private rented sector. There is a similar pattern in Scotland; Dr Mary Taylor from the Scottish Federation of Housing Associations explained that many of the properties sold through RTB ended up “in the private rented sector at rents approximately 50 per cent higher than social rents for the exact same properties, in worse conditions. That has impacted on our ability to manage the assets of social landlords, and on the public purse in terms of the housing benefit bill, and has constrained access for aspiring tenants and for those needing to move.” (*Housing Associations and the Right to Buy*, report from the House of Commons Communities and Local Government Committee, January 19 2016, Section 4, paragraph 45)

Rents charged by private landlords are normally higher than social rents for equivalent properties. This means that more housing benefit is required. The Communities and Local Government Committee said:

“We note also the finding from our commissioned research of increased housing benefit costs of over £1,000 per year per claimant in the private rented sector rather than in social housing.” (paragraph 46)

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<sup>61</sup> Housing chart 5-v2, from Department for Communities and Local Government table 101, in ‘UK Perspectives 2016: housing and home ownership in the UK, ONS Digital, May 25 2016.

<sup>62</sup> Department for Work and Pensions benefit expenditure and caseload tables 2017, Office for National Statistics.

Why did former tenants who became homeowners, or their descendants, decide to sell? Diverse reasons, including cashing in and spending the money, moving to another area, or worry about the cost of maintaining their homes, or after their death having the house sold to pay care fees and/or legacies.

Under Right to Buy, central government prevented local authorities from using the proceeds of sales to build replacement homes. Now, when they can afford to, authorities are buying homes on the open market to try and ease their waiting lists, which are exacerbated by the UK's rapidly rising population. It took 34 years from 1971 to 2005 for the total population to rise from 55.928 million to 60.413 million, and only ten years from 2005 to 2015 to expand from 60.413 million to 65.110 million. The Office for National Statistics estimates that by 2025 there will be 69.444 million people living in the UK, a figure predicated on net migration remaining at 185,000 a year from 2020 (compared with 313,000 in 2014, 332,000 in 2015 and 248,000 in 2016).<sup>63</sup>

The Wales population, mid 2015, was 3.099 million. Since 1971 it has grown by 13%, compared with almost 16.5% for the UK as a whole.

### 4.3 Housing in Carmarthenshire

Carmarthenshire County Council was the first Welsh local authority to suspend Right to Buy, making the announcement in January 2015, thereby signalling the intention to protect its social housing stock of 9,036 homes.

**Table 4 Carmarthenshire County Council's housing stock**

As at June 5 2017

Type of dwelling	Number
Bedsit, ground floor	4
Bedsit, mid floor	15
Bedsit, upper floor	3
Bungalow	2,182
Flat, ground floor	981
Flat, mid floor	56
Flat, upper floor	867
House	4,888
Maisonette, ground floor	15
Maisonette, upper floor	25
Total	9,036

Source: Carmarthenshire County Council

The county council has a strong housing department and officials committed to providing decent homes. Even so, the waiting list signifies a mismatch between homes required and homes available. The waiting list for the Llandovery area at the

<sup>63</sup> Population estimates, 2014-based population projections and provisional long-term international migration estimates, accessed June 5 2017.

end of March 2017 was 277, including 128 single people and 36 couples. There is substantial unmet demand for 1-bedroom homes, with 164 applicants on the list, and only 15 suitable properties, all housing association stock. Sixty-six applicants were waiting for a 2-bedroom home, of which there are 97 (80 council-owned and 17 housing association dwellings).

Llandovery has empty private-sector buildings. Fifty were advertised on Rightmove for sale in and within a mile of Llandovery, on June 16 2017, ranging from £76,950 for a former shop to £1.6 million for a country house with 15 acres. Only five of these properties were under £100,000, and the cheapest was £77,500 for a 2-bedroom house, with one bedroom leading off the other. This, and no more, is just about affordable for an individual earning £20,000 a year and with a £15,500 deposit.<sup>64</sup>

The affordability gap, denying a home of their own to people on local incomes, is a space where social landlords and not-for-profit groups like Calon Cymru can work.

#### 4.4 Policy Change to Increase the Supply of Rural Homes

If land prices do not fall relative to incomes, the crisis of insufficient rural homes will deepen. Abrupt policy changes have the potential to generate severe unintended consequences as well as the desired outcomes, so a gradual approach is safer but results are slow to appear.

Policy changes worth considering include:

- \* Introducing a Community Right to Build policy in Wales. Community councils convinced of the need for development in their area could override restrictions in the LDP.
- Compulsory purchase regulations, requiring full market prices to be paid, have become a brake on provision of affordable homes. Local authorities and partner not-for-profit community organisations should be able to compulsorily purchase land for affordable housing, where there is clear evidence of need, at less than development value. The price ceiling on land zoned for development could be set at half the difference between agricultural and development value. On Rural Exception Sites outside development boundaries, a lower ceiling could apply. The Welsh Government's role in compulsory purchase is currently unclear because the devolution settlement is silent on the matter – compulsory purchase is neither reserved by the UK Government nor devolved to Wales. However, under the Wales Act 2017, powers to determine compensation would be entirely a matter for the UK Government.<sup>65</sup>

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<sup>64</sup> Data from an affordability calculator.

<sup>65</sup> See *Compulsory Purchase* by Katy Orford, The Planning Series 15, Research Briefing, National Assembly of Wales.

- \* Despite the forthcoming absence of power to vary compulsory purchase regulations, the Welsh Government's new authority over land taxation might be applied to a scheme to persuade landowners to accept less than full market price for compulsorily purchased land in return for exemption from tax liability. Such a policy change could reduce the cost of land for social housing and other essential development.
- \* Restrictions on planning permission renewals, so that more land with permission is developed without delay.
- \* Planning policy alterations to
  - increase solar energy capture
  - incorporate more green open space in housing developments
  - promote orchards, allotments and wild planting within developments
  - include more live-work homes in new neighbourhoods.
- Exempting sales of land for Rural Exception housing from tax liabilities.

## 4.5 Ideas from Overseas

Public-sector housing initiatives are important overseas. They are often in city settings. The '**Vienna Model**', for example, has been fashioned by the municipal government of the city of Vienna, Austria. Around 60% of the city's residents live in subsidised apartments, which the local government wants to make cheaper to build. Officials do this by having competitions for developers, judged by a jury of architects, builders, housing law specialists, and representatives of the city government. The contests are reported to have reduced construction costs by about 20%.<sup>66</sup> The idea is not strictly relevant to Calon Cymru's project, because mainstream volume builders are not particularly interested in small rural neighbourhoods and Calon Cymru's ethos includes a strong preference for localism – where local people set up enterprises and profits are fed back into the regional economy.

Australia has the '**Nightingale Model**', appealing to ethical investors who agree to a maximum profit of 15% instead of the 30% typically expected by antipodean developers. The homes are pared down apartments, with only one bathroom, without air conditioning or parking or a sales suite or expensive marketing, and are offered to buyers at a discount of around 15% off the market price. Nightingale is a franchise, licensed to architects and housing consortia, who follow the model of simple design, location near public transport, and shared spaces such as laundries and garden/food growing areas. The model appeals to people seeking greener lifestyles in cities. They need at least medium incomes to afford homes in the heated Australian market, even at a discount of 15%.<sup>67</sup>

<sup>66</sup> [www.shareable.net/blog/public-housing-works-lessons-from-vienna-and-singapore](http://www.shareable.net/blog/public-housing-works-lessons-from-vienna-and-singapore), accessed February 28 2017.

<sup>67</sup> [www.domain.com.au/news/five-myths-about-mekbournes-nightingale-apartment-developments](http://www.domain.com.au/news/five-myths-about-mekbournes-nightingale-apartment-developments), accessed February 28 2017.

**Baugruppen** or building groups are popular in Germany, particularly to make city living more affordable. Their equivalent in the UK would be housing co-operatives. They bypass developers, but there is of course a trade-off. The lower costs, typically 15% but up to 25% in some locations such as Berlin, according to enthusiast Mike Ellason,<sup>68</sup> are counterbalanced by work time demands on group members. Working together helps create an active community, though, and this is hard to value in financial terms.

City governments are often keen to encourage Baugruppen and help with land and legal aspects, banks are used to lending to them, and land taxes are discounted, Mike Ellason reported. Different types of group opt for shared facilities to suit them, maybe rehearsal space for musicians, or vegetable growing areas for urban food producers.

#### 4.6 Next Door in Powys

Powys County Council's '**Home Grown Homes**' project, launched in 2017 and expected to cost £1.5 million, aims to create a strong supply chain for locally grown timber to be used in building construction. Partners in the project include Natural Resources Wales, the Welsh Local Government Association, Community Housing Cymru, and housing associations. Timber products will be used in new build and retrofit social housing, and in other buildings, to meet the goals of the Well-being of Future Generations Act as follows:

- Prosperous Wales -- *Boosting business growth, training and job opportunities, especially in rural communities.*
- Resilient Wales -- *Further forestry planting, also supporting flood prevention measures.*
- Healthier Wales -- *Scandinavian studies indicate that timber buildings provide healthy living and working environments, the county council discovered.*
- More equal Wales -- *Improving the prosperity of rural areas should reduce income differentials between rural and urban areas.*
- Wales of cohesive communities -- *A more buoyant rural Wales would help stabilise populations, encouraging young people to stay.*
- Wales of vibrant culture -- *The project will follow the principles of the Welsh Government's Welsh language policy.*
- Globally responsible Wales -- *Using local timber will help diminish Wales' carbon footprint.*

Woodknowledge Wales, which is backing the project enthusiastically, has members in timber supply, construction and housing, including affordable housing maker

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<sup>68</sup> 'Baugruppen: to form a more affordable urbanism', by Mike Ellason, May 20 2014, [www.theurbanist.org/2014/05/20/baugruppen-to-form-a-more-affordable-urbanism](http://www.theurbanist.org/2014/05/20/baugruppen-to-form-a-more-affordable-urbanism), accessed February 28 2017.



Western Solar (see 4.7.4 below). Tabitha Binding of Woodknowledge Wales said: “Powys, as Wales’ largest county has ample land for timber production, existing sawmill capacity and a track record of timber framed manufacturing.”<sup>69</sup>

## 4.7 More Sustainable Homes

### 4.7.1 Buying the Benefit of Cheap to Run Homes

Energy-efficient homes do not cluster in any price bracket, but vary from simple cabin constructions to highly engineered homes including mechanical ventilation with heat recovery and PassivHaus or equivalent certification. At the upper end of the price scale, homes can change hands for over half a million pounds (as at **Hockerton** in Nottinghamshire, see note to 3.2.1) and are outside the sorely needed ‘affordable’ cost range.

**The Wintles** at Bishop’s Castle, Shropshire, started by the Living Village Trust in 1999 and being concluded by Cavendish & Gloucester plc, and **The Acorns** at Crickhowell, Powys, a 39-home development intended to appeal to remote office workers, are eco-developments where homes sell for substantial amounts. Two 4-bedroom styles at The Wintles, where residents have access to allotments (not all used) and woodland, were advertised at £465,000 in July 2017. At The Acorns, which went bankrupt in 2000 when funder Triodos Bank called in receivers, and is now called **Upper House Farm**, examples of property for sale include a 2-bedroom for £300,000 and 5-bedroom for over £400,000. The reduced energy costs of living in these houses, in attractive semi-rural settings, have transformed into price premiums.

Should eco-homes be the preserve of affluent buyers? It is people on low to middle incomes who most need homes that are inexpensive to live in, but they are more likely to be in buildings which are poorly insulated and costly to heat.

### 4.7.2 Self Builds

Self-building, not for everyone, is in the tradition of Walter Segal, who in the mid 20<sup>th</sup> century popularised a simple but rigorous timber-frame system of architecture responding to materials available and using construction techniques which non-specialists could easily learn. Components are fitted together with dry joints using bolts and screws, and the resulting buildings are adaptable and easy to extend.<sup>70</sup>

Self-builders providing their own unpaid labour can create warm, easy to maintain homes at very low cost. Lucy Golder for example, studied straw bale building at the Centre for Alternative Technology, Machynlleth, and has constructed her own three-bedroom, 56 square metre, moveable version on a caravan footprint, for a materials cost of £10,000. Lucy bought the barley straw, 220 bales, for £700 including delivery.

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<sup>69</sup> ‘Council looks to home-grown homes’ by Bill Tanner, March 15 2017, [www.24housing.co.uk](http://www.24housing.co.uk).

<sup>70</sup> ‘The Segal Method’ by Jon Broome in *Architect’s Journal*, November 5 1986



Douglas fir an inch thick clads the outside, and with sheep's wool and glass wool insulation, one wood-burning stove can provide nearly all the heat required.

One Planet Developments in Wales have all been self-builds so far. At Rhiw Las near Whitland in Carmarthenshire, four households are creating land-based enterprises, each with a self-built home (also see 5.4 below).

While there is potential for self-building to expand, it is likely to remain a niche sector because of the skills and time commitments required.

#### 4.7.3 Long Hard Road: Transition Homes

Affordable, sustainable homes, even if not self-built, are difficult to deliver. A community land trust in Devon shows just how long the process can take. Transition Town Totnes in Devon set up Transition Homes Community Land Trust to build 27 affordable eco-homes at Clay Park, Dartington. From an idea in 2008, in July 2017 the plan was close to receiving permission. Project co-ordinator Nicola Lang said that negotiation of a Section 106 agreement (by which the planning authority imposes conditions) was taking months, but they hoped to start work on site in spring 2018 and to finish in late 2019 or early 2020 – more than a decade after starting out.

From inception until the submission of a planning application in December 2015, the CLT spent nearly £400,000, including buying a seven-acre site for £250,000. This was more than the CLT expected to pay. Originally £150,000 was the anticipated figure, but a developer also wanted the site, and the price escalated. As a result of this and other setbacks – the Environment Agency's refusal to allow a vertical flow reed bed drainage system, after negotiations costing several thousands of pounds, and Western Power's refusal to allow grid connection for solar photovoltaic electricity, because of insufficient grid capacity, for example – the CLT has had to introduce open-market housing – eight dwellings -- to subsidise the remaining 19 affordable ones. The experience was exhausting for some CLT members, and differences of opinion led a number to resign.<sup>71</sup>

The funds for the project have come from several sources, including government grants, loans from local supporters (who funded the land purchase) and CAF Venturesome, the bank of the Charities Aid Foundation.

The problems experienced have varied causes, including unfamiliarity of the planning authority and of statutory consultees with low-impact development using local, sustainable materials and with multiple objectives such as food and energy production.

Homes deliberately built to minimise emissions and the costs of buying or renting and living in them are still rare, but architects and some small-scale developers are responding to the problem. This 'new wave' of homes include Western Solar's Ty Solar; LILAC's straw bale homes; RUSS's imaginative vision in Lewisham, London;

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<sup>71</sup> 'Planning and building transition homes' by Chris Bird, *Permaculture*, November 5 2015.

Saffron Lane affordable homes in Leicester; Tigh Grian's Resource Efficient House; Mark Waghorn's One Planet Development monopitch home and caravan footprint home; and the Morphut from Nick Dummer's Spacescape. The examples featured show how small organisations are changing perceptions of what is possible in 'affordable' housing, despite often meeting substantial barriers.

#### 4.7.4 Western Solar

##### *4.7.4.1 Prototype Privately Funded*

Dr Glen Peters' 'affordable solar homes' project, based in north Pembrokeshire near Cardigan, has advanced beyond a three-bedroomed larch-clad prototype at Rhosygilwen to a group of six homes at Glanrhyd, three and a half miles from Cardigan town.

Dr Peters has the ambition for his company, Western Solar Ltd, to supply 1,000 homes and to work with housing associations and local authorities to provide social housing.

The homes are constructed from local softwood timber, and include eleven inches of Warmcel cellulose insulation produced in Aberdare from recycled newspapers, and pumped in to twice atmospheric pressure. Each monopitch roof is home to 8kW of integrated photovoltaic panels which over a year generate surplus energy and thus provide an income from the feed-in tariff as well as giving the occupants free electricity. Total power demand is about 12% of that of a conventionally built home.

The prototype, built on land Dr Peters already owned, cost about £75,000 and was funded with income from his solar farm on adjacent land, and with a £47,000 grant from the Sustainable Development Fund.

The unit costs of the Glanrhyd houses, built in the Pembrokeshire Coast National Park on the site of a now-demolished garage, were higher mainly because of factoring in the land cost and connecting to the National Grid. Each of the four two-bedroomed homes, built as two pairs of semi-detached, cost about £100,000, and the two detached three-bedroom houses came in at £130,000 apiece. The three-bed homes are 100 square metres, the two-bed ones slightly smaller, but still spacious.

The larch-clad Glanrhyd houses are built on a concrete slab. This differs from the prototype, constructed using the box beam method and with a suspended timber floor. Concrete is more durable and has a lower maintenance requirement, although the concrete industry accounts for almost 5% of worldwide emissions, and manufacture of one tonne of structural concrete, with cement content about 14%, emits 410 kg/sq metre of CO<sub>2</sub>.<sup>72</sup>

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<sup>72</sup> Data from Wikipedia, [https://en.wikipedia.org/wiki/Environmental\\_impact\\_of\\_concrete](https://en.wikipedia.org/wiki/Environmental_impact_of_concrete).



*A pair of Western Solar's 2-bedroomed larch-clad homes at Glanrhyd.*

The roofs are a sandwich of compressed timber, membrane, and galvanised steel with photovoltaic panels. Windows are double- rather than triple-glazed, because the climate is mild and the houses are already mini power stations. Orientation is important because the photovoltaic panels, and the main windows, need to face due south.

Maintenance should be minimal until the larch cladding needs replacing after 25 to 30 years, by which time the photovoltaic panels would also require switching. The panels lose efficiency annually by about one percentage point, so after 25 years would only be operating at 75% of initial capacity.

The two-bedroomed homes are let as 'affordable', at no more than 80% of local market rents, and in May 2017 cost tenants £480 a month. The Pembrokeshire Coast National Park is an important draw for holidaymakers, whose demand for accommodation pushes up rental costs. Even so, a rental of £480 a month with hardly any energy bills is an attractive proposition.

The larger, detached houses carry a market rent of £600 a month. The target return on investment is 4%, and bearing in mind the construction costs of about £1,000 per square metre, the amount which can be spent on land is tightly limited if the venture is to be economically viable.

The six homes at Glanrhyd also share an electric car provided by Dr Peters, a Nissan Leaf which has a range of about 125 to 155 miles, depending on battery size.

#### *4.7.4.2 Boost for Local Economy*

Modules for the houses are constructed in the Western Solar factory, a converted farm building, where 10 people, including apprentices, work. The mission is not solely housing, but also about providing local work and recirculating money in the local economy. Some 80% of the component parts of each building are sourced

locally, and the airtight timber frames, representing 40% of the total, are made in the factory.

Inside, the ground floor kitchens have dark Melamine flooring to absorb heat. Carpets are also dark. Paint is breathable, from Earthborn. One satellite dish serves all six homes, but each has a socket for charging an electric vehicle. Each home has a suitable space for office work, an integral storage shed, retracting clothes line, high-efficiency kitchen appliances and LED lighting. Heating is simple – storage heaters, powered by energy from the roof once the hot water is at the desired temperature, and by grid energy when the sun is absent. The energy contribution from the photovoltaic panels means that storage heaters can be accumulating heat at any time of day at low overall cost, whereas in conventional builds in past decades they were on a separate low-cost night-time rate – the ‘Economy 7’ meter -- because they were uneconomic to operate during the day.

For Dr Peters, storage heaters are cheap and easy to replace if necessary, but their simple technology means they rarely go wrong. Both underfloor heating and a ground-source heat pump were considered as heating options, but rejected as too expensive. Mechanical ventilation with heat recovery, an essential feature of the PassivHaus (see Appendix 3.4), was also rejected as too expensive and because, as Dr Peters said, “people like to open windows”. The prototype house stored electricity in lithium ion batteries, which can be unstable and a fire hazard, and so have not been included in the commercial houses.

The houses accord with level five of the Code for Sustainable Homes (which no longer applies in England and in Wales has been replaced by Wales Part L of the building regulations). The windows comply with the German PassivHaus standard for minimal energy loss.

#### *4.7.4.3 New Supply Chain Needed*

For Dr Peters, it has been quite a battle to publicise the homes and to persuade local authorities and housing associations to adopt them. The volume housebuilders are committed to conventional brick construction, and their supply chains are strongly developed. There may be some resistance from specifiers to affordable housing, which looks like smart open-market housing. They may conclude that the Ty Solar design would be too expensive, without taking the energy-saving properties fully into consideration. The difficulty here is that the developer has to put in the solar panels, but it is the tenant or purchaser who benefits from the low bills, sometimes little more than the standing charge.

The total cost of developing and building the seven homes finished so far, including technical experimentation, is about £2 million. Their use of local timber and local labour, their low running costs and high overall sustainability are benefits which warrant wider adoption. The economy benefits because local people are trained and employed, and materials are sourced within the region whenever possible. Dr Peters

calculates that for each £1,000 invested, the multiplier of 2.2 means that the economy is augmented by £2,200.

#### *4.7.4.4. Pointers for Calon Cymru*

- Glen Peters invested his own money in creating the Ty Solar.
- Supply chains for timber-framed energy-efficient houses are embryonic.
- The construction materials and method have the potential to augment the local economy.

### **4.7.5 Mark Waghorn's Designs**

#### *4.7.5.1 One Planet Caravan Model*

Mark Waghorn's architectural practice, based in Llandeilo, is a leader in low-impact design and has two concepts which are particularly relevant: the One Planet caravan model and the One Planet transitional live/work home.



*Mark Waghorn Design's One Planet caravan-footprint home: £50,000 to £60,000.*

The caravan-footprint home costs from just under £50,000 to about £60,000. The more expensive version includes photovoltaic panels and solar thermal water heating, as well as insulation with wood fibre batts, recycled newspaper, or comparable materials. The point of the caravan footprint is to qualify to be assessed under park home regulations (to British Standard 3632) and not full building regulations, without compromising on thermal efficiency. The home is built in two sections, which are connected on site. Prefabrication means that construction time on site is minimal.

Building regulations in Wales require all new build and converted properties to be fitted with sprinklers in case of fire. This adds about £1,000 to £2,500 to the build cost, which is significant when considering homes which are intended to be affordable. The sprinkler requirement does not apply to dwellings built to park home standards, thereby giving them a cost advantage.

The external dimensions of each half of the One Planet caravan model measure 12.5 metres by 2.9 metres, a gross internal floor area of 62 square metres, built for



between £800 and £970 per square metre. The frame is timber, using engineered I-studs to reduce weight and thermal bridging. Insulation is inserted between the I-studs. Cladding can be factory-fitted or added on site, for example to use local timber. The home is loaded, unloaded and moved into position on a removable steel chassis. In position, it sits on adjustable feet, on minimal pad foundations. Connections to utilities, either mains or private, need to be organised. Prefabricated possible additions include ladders and log stores on north elevations and verandahs and glazed spaces on south elevations.



*Interior of the Mark Waghorn caravan footprint home.*

#### ***4.7.5.2 One Planet Transitional Live/Work Home***

Mark Waghorn's transitional live/work home is designed to be added to over time, and to be built without the use of mechanical lifting equipment. The roof is monopitch with the highest edge on the north side.



*Mark Waghorn designed this live-work home suitable for One Planet Developments.*

The timber framing is composed of:

- Portal frames for each bay.
- Beams at the heads of the north and south walls, with rigid joints to the portal frames, and further strength supplied by infill panels on either side of the columns on the north and south elevations. The support provided by these infill panels increases the potential width of door openings in the centre of bays.
- Secondary roof timbers run horizontally, taking the load from the roof onto the portal frames.

This organisation of loadbearing means that the end walls are not integral to the structural frame and can be removed for the building to be extended. The strength of the frame means that walling need carry only its own weight.

Depending on the site, foundations could be screw piles with vertical roundwood timbers bolted to them above ground level, and cross bracing with diagonal cables.

#### *4.7.5.3 Pointers for Calon Cymru*

- Both the caravan footprint and the transitional live/work dwellings fit the concept of low-emission homes suited to rural and village locations where high densities can be avoided. The dwellings exceed current building regulations for insulation on new homes
- The designs can use local timber and thereby support forestry enterprise.
- Fuel such as logs or other biomass would be sourced locally. Net emissions from heating would be zero.
- For groups of these homes, electricity could come from sources such as photovoltaic panels and micro hydro power, and would be stored in a battery bank.
- There is a waiting list for small homes in the Llandovery area, which these designs could help meet in a novel way.

### **4.7.6 Morphut**

#### *4.7.6.1 Simple and Low Cost*

The larger of the two-, three- and four-bay timber-framed structures from Morphut in Shropshire are suitable for dwellings. The internal dimensions of the four-bay design, which can include two bedrooms, are 3.8 metres by 10.9 metres. The basic cost in 2017 is £37,000, plus £6,500 for foundations, delivery, internal loft, and electrics, and about £8,000 for fitting a kitchen and shower room, a total of £51,500 excluding land.

Designer Nick Dummer explained: “The idea was for a ‘kit of parts’ approach, using readily available and standard materials, assembled using straightforward carpentry techniques by two people. We formed Morphut Ltd at the start of 2011, and started building a prototype 31 square metre habitable cabin a few months later, having got planning permission and building regulations approval. The module is two wall

panels, each made with timber studs and full size OSB (oriented strand board) sheets, fixed between a primary Douglas fir timber frame of an asymmetric roof truss bolted between paired posts. A depth of 3.8 metres, formed by three full size wall panels, provides for compact but useful living space, and is readily spanned by the trusses. The basic structural module of 2.6 metres wide and 3.9 metres deep can be repeated in both directions. As the wall panels are not loadbearing, openings can be wherever they are required, within reason.

“For the prototype we used mini concrete pile foundations, formed by making a 300mm diameter one-metre-deep hole with a digger-driven auger and filling it with site-mixed concrete. These pile foundations were extended to about 300mm above ground by using 300mm ribbed plastic drain pipes as formwork. A chassis of engineered timber sits on the piles, fixed together with purpose-made steel brackets which also hold the structural posts.

“The system is intended to be extendable – the steel chassis brackets allow for additional perimeter beams to be easily fixed, and the end wall panels can be relocated. There is also scope to add various ‘pods’ around the edge, if and when the need arises, using the paired posts as part of the structure.

“The roof profile provides a suitable pitch for photovoltaic or solar thermal panels and is readily accessible (from inside and out) for storage at the upper level. This can also be a sleeping platform.”



*A Morphut  
extendable pod  
home.*

Insulation exceeds the standards stipulated in the building regulations. Polyurethane was chosen as giving the highest insulation value in relation to thickness and weight, and can be fitted tightly between the vertical studs without risk of sagging. The walls have 50mm of insulation between the studs and another 50mm over the external face of the panels, eliminating cold-bridging.



Nick Dummer has focused on use of timber, simplicity, modular design and replicability. Morphuts are candidates for a sustainable neighbourhood including starter homes which can be enlarged later. The parts are readily available from local sawmills, steel fabricators, metal roofing suppliers and builders' merchants.

#### *4.7.6.2 Pointers for Calon Cymru*

- The Morphut is low-carbon in construction and use.
- It uses local materials.
- It could be used as affordable housing without public subsidy.

### **4.7.7 LILAC's Straw Bale Homes**

#### *4.7.7.1 Origins*

LILAC (Low Impact Living Affordable Community) is in Leeds. Calon Cymru's search for affordable homes using local and, as far as possible, renewable materials, stands to benefit from LILAC's experiences, which are documented in Paul Chatterton's book *Low Impact Living*.<sup>73</sup>

Important points include:

- The land for LILAC, at Wyther Park, Bramley, was purchased from Leeds City Council. The sale price required considerable negotiation. The land was contaminated and the Homes and Communities Agency (HCA) paid for decontamination on condition that the city council sold the land for use by LILAC.
- Communication channels with potential funders are very important. Funders include some not immediately obvious such as the Department of Energy and Climate Change and the Homes and Communities Agency, which offered a grant of £20,000 per home as part of a project to develop supply chains for natural materials, on top of funding decontamination.
- The 20 homes, from 1-bed to 4-bed, have a communal and private gardens, and a community food growing area open to the public in daytime. There is also a 'common house' for the community.
- The buildings are ModCell, a prefabricated strawbale and engineered timber system. They would not have been 'affordable' without the HCA grant. The average construction cost in 2010 was £1,081 per square metre and the gross cost £1,744 per square metre.
- A community loanstock offer was important not for the amount raised but for extending awareness of and support for the project among the local community.
- The process required frequent re-assessment and change.

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<sup>73</sup> *Low Impact Living: a field guide to ecological, affordable community building*, published by Routledge, 2015. ISBN 978-0-415-66161-4.

The LILAC venture has three main aspects – low impact, affordability, and community, supported by a set of values: well-being, diversity, ethics, environmental sustainability, grassroots, self-reliance, learning and equality. The story of LILAC shows that several of these values have already been essential for the development to proceed. The original idea emerged late in 2006, but it was more than six years before the first residents could move in. Success was not achieved solely through presentation of a well-thought-out case to the landowner and funders, but through creating a network of supportive professionals. Author Paul Chatterton noted (p.56) that it was “probably clear by now that a large part of making a project happen relies on calling in favours from friends and acquaintances”.

This is an important point for feasibility studies, which can overstate their own importance. People, not print, make things happen.

The LILAC instigators met a senior asset manager in Leeds City Council in April 2008. Within four months, the heads of housing and of regeneration and sustainable development were consulted, and they brought in the affordable housing team. In September 2009 an outline offer to sell the site came from the strategic asset management department.

LILAC engaged the services of a project manager, Jimm Reed, and a solicitor, Ian Moran, and searched for design and construction options, choosing ModCell. Craig Wright, ModCell’s inventor, acted as the architectural designer for the scheme. Craig was the initial conduit for a £400,000 grant from the Department of Energy and Climate Change (DECC) and the Homes and Communities Agency (HCA).

A housing finance consultant and a commercial valuer helped LILAC to prepare for mortgage discussions, concluded in June 2011, a month after planning permission was granted, when Triodos Bank lent £1.5 million over 25 years at 4.4%. Lindum Construction Group of Lincoln, the chosen contractors, started work on site in March 2012 and the houses were completed between March and May 2013.

Projects are situated in time as well as place, and the timing of the LILAC venture was fortunate in two particular respects:

- The land purchase from the city council happened during the banking crisis of 2007-09, when demand for development land dipped.
- The Coalition government formed in 2010 was keen to promote community housing as part of the then Prime Minister David Cameron’s ‘Big Society’, and this led to grant aid from DECC and the HCA.

#### *4.7.7.2 Technology*

The strawbale and engineered timber ModCell dwellings were more expensive than brick/block or standard timber-frame homes, but possible because of grant aid from DECC and the HCA (4.7.7.1 above). Straw in building is carbon-negative, and according to ModCell one of their homes of 100 square metres sequesters 43 tonnes

of CO<sub>2</sub>.<sup>74</sup> The LILAC homes draw from the PassivHaus concept, but deliberately do not meet the full PassivHaus standard because of its greater cost of windows, insulation materials and certification, and also because LILAC wanted larger windows in the interests of neighbourliness and community living. Trade-offs between efficiency, affordability and community were an important part of the design process.

The homes do incorporate mechanical ventilation with heat recovery (MVHR). The Sentinel Kinetic units from Vent Axia recover up to 94% of the heat energy which would otherwise escape. Occupants have found that MVHR benefits air quality and thermal comfort. The units can be noisy, though, and occupants need to learn how to use them.

#### 4.7.7.3 Affordability

It is not possible to say that LILAC dwellings are without public subsidy, because they received government grant aid. Without that aid, they would have required occupants to have higher incomes. As it is, LILAC is not 'social housing' and occupants need minimum incomes, from work or savings. The next table, from chapter 5 of Paul Chatterton's book, shows minimum net household incomes and deposits in 2013.

**Table 5 Minimum net household incomes and deposits needed to live in LILAC, 2013**

Size of dwelling	Minimum net household income £		Deposit required £	
	from	to	from	to
1 bed	14,843	20,315	6,314	8,873
2 bed	22,816	29,870	9,722	13,020
3 bed	33,142	41,365	14,233	18,078
4 bed	39,388	48,497	16,925	21,184

*Source: Low Impact Living, op.cit, p.136*

The financial arrangements were just as challenging, probably more so, than the technical aspects of the build. The properties are owned by a mutual home ownership society (the UK's first), which issues leases to occupiers. The leases are for 20 years, to avoid the risk of leaseholders applying for the freehold, which under leaseholder enfranchisement they can do after 21 years. Households pay 35% of net income (after taxes, national insurance, pension contributions of up to 10% of income, union subscriptions and student loan repayments) to the society, towards repaying the society's mortgage and for maintenance, upkeep of shared areas, and dilapidations. Householders can pay extra to increase equity in the society, and

<sup>74</sup> The ModCell website [www.modcell.com](http://www.modcell.com) has technical information. Paul Chatterton's book *Low Impact Living* recounts the reasons for choosing ModCell, especially in chapter 4, 'Designing and building our homes'.

should they need to move, after three years 75% of their portion of increased equity would be credited to them, with 25% being retained by the society.

People in work when they move in might lose their jobs and be out of work for an extended period, in which case occupancy could be changed to a tenancy and with it, entitlement to receive Housing Benefit.

The homes have to be permanently affordable. This can limit options for people who want to re-enter the open housing market, because homes are valued according to the UK index of average weekly earnings, not to any measure of house prices. Should the model spread to many other localities, this potential drawback should reduce.

But LILAC is not about individuals using homes as investments. It is about developing a community where people share resources and responsibilities, and look out for each other. Decision making is by consensus, with voting kept in reserve as a last resort.

#### *4.7.7.4 Pointers for Calon Cymru*

- LILAC has received public subsidy.
- The build stage was a trade-off between thermal efficiency and affordability.
- The arrangements for permanent affordability may create difficulties for residents who need to enter the open market for housing (if they have to move for work, for example).
- The financial aspect is complex and has required considerable professional expertise.
- The community aspect is socially desirable and valued by residents. Paul Chatterton (op.cit p.196) writes:

“Building a community of members has been probably the most challenging, but also most rewarding, aspect of the LILAC project. Reflecting back on the past six years, the most important, and sometimes undervalued, work of community building has been around good communication and decision making. This created the vital bedrock for everything else we wanted to do – design our neighbourhood, get through the planning process, negotiate money and land, and construct our homes. And community building is simply an art with very few short cuts available.”

#### *4.7.8 Saffron Lane Estate, Leicester*

##### *4.7.8.1 Social Housing*

Winner of the 2017 RICS (Royal Institution of Chartered Surveyors) Awards for the East Midlands in the residential category, Heathcott Road on the Saffron Lane Estate is a development of 68 homes to the PassivHaus standard, the largest PassivHaus estate in the UK to date. The idea came from the Saffron Lane Neighbourhood Council (SLNC), which is a third-sector organisation founded with local authority support in 1976. SLNC partnered with Leicester City Council, East

Midlands Homes<sup>75</sup> and builders Westleigh Homes, to create the project, on 13.2 acres of disused land formerly owned by the city council and sold to East Midlands Homes (EMH) for £1. The Homes and Communities Agency gave East Midlands Homes, the housing association which owns and manages the dwellings, a grant of £1.55 million towards the £7 million costs. The homes are social housing for rent, adjacent to a community farm in which residents will be encouraged to take an interest.

The development illustrates partnership working across several organisations, the vision of SLNC as instigator, and the active co-operation of the city council.

The £7 million cost equates to just under £102,950 per dwelling. The low annual heating costs, estimated by PassivHaus enthusiast David Thorpe at £13 a year compared with £735 for a conventionally built home, give tenants savings which they can spend elsewhere, and of course CO2 emissions are minimised.

#### *4.7.8.2 Pointers for Calon Cymru*

- The development is an imaginative use of disused land.
- The project is supported by local and national government.

#### **4.7.9 Rural Urban Synthesis Society (RUSS)**

##### *4.7.9.1 Questions of How to Fund Not-For-Profit Housing*

RUSS is a community land trust which is the preferred bidder for a site in Ladywell owned by the London Borough of Lewisham. The plan is to construct 33 homes:

- Four 1-bed flats and a 4-bedroom house for social rent
- Two 3-bedroom flats for young people to share
- Eight 1-bed and six 2-bed flats for first-time buyers others on a shared equity basis
- Five 3-bed and two 4-bed houses and one 1-bed and four 2-bed flats, for shared equity purchase by households priced out of the open market
- Shared guest accommodation, community dining room and kitchen, office and workshop

The homes would comply with London Plan minimum standards plus 10%, and would reach PassivHaus energy standards. RUSS expects 20% of the construction to be carried out by self-builders, working in teams from an on-site workshop, apart from final decoration, which would be done individually.

RUSS is working to ten principles:

1. Create a socially, environmentally and economically sustainable neighbourhood

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<sup>75</sup> East Midlands Homes says it is “the leading provider of affordable housing and support services” in the region. Turnover in 2015-16 was £98.7 million.

2. Balance the interests of residents, the wider community and the borough council
3. Build “truly affordable homes”, affordable for the long term
4. Democratic control of the development
5. Participate in the wider community
6. Reflect the local community by housing residents with a range of ages and at various life-stages
7. Reduce environmental impacts and create resources of power, water and food
8. Residents to be involved in design, construction and management
9. Provide training for residents, community land trust members, local people and volunteers
10. Achieve a self-financing outcome for the trust and a scheme-wide mortgage offer for purchasers of the homes for sale

RUSS has a grant of £186,000 from the Greater London Authority and another of £35,000 from the Tudor Trust. The 2016 accounts also show £41,435 from the Big Potential fund of the Big Lottery and £39,965 from the charity Groundwork. The grant sums bring to mind the housing officer who said that affordable housing is impossible without public subsidy.

Hoped-for commercial funders are Triodos Bank, for the construction, and Ecology Building Society, for mortgages to be offered to residents. RUSS is hoping to borrow £4 million from Triodos as a two-year development loan and, on completion, a £4 million loan over 25 years.

Sample costings from RUSS highlight the differences between ‘affordable’ in London and West Wales. RUSS has calculated that the minimum of 25% of shared equity in a 1-bedroom flat would cost £77,500, pricing the flat at £310,000. This would reduce to £272,000 for the maximum possible self-build. In addition to mortgage payments, the monthly rent would be £447. A 3-bedroom house would cost almost twice as much.

#### *4.7.9.2 Pointers for Calon Cymru*

- Substantial grants have enabled RUSS to plan the project.
- Fees are expensive – in 2016, RUSS spent £67,785 on ‘strategic advice and group facilitation’. £22,955 on financial advice, £3,883 on accountancy and £4,427 on loan interest. The 2016 total of £105,243 on charitable activities was all before the start of any construction work.
- The property market in West Wales is calmer than in London, and in theory it should be easier to build affordable homes.

#### **4.7.10 Tigh Grian**

##### *4.7.10.1 Scottish Building Standards Gold Performance*

Tigh Grian – House of Sun – is a Scottish/Swiss design, developed in partnership with Zero Waste Scotland. A prototype, to conform with the 2016 Scottish Building Standards Gold Performance, was constructed at the Building Research

Establishment's (BRE) Innovation Park at Ravenscraig, and two more followed at the BRE in Watford. These have terracotta BIPV (building integrated photovoltaic) roofs from project participant ÜserHuus AG of Hergiswil, Switzerland. Tigh Grian is the development company for ÜserHuus and JR Partners Ltd, the latter a company controlled by Robert Iain Macleod Cowie.

The Watford houses are to be refitted with façades of multi-coloured PV cladding developed at the Lucerne University of Applied Sciences and Arts and distributed and installed in the UK by GenClad Ltd of Northern Ireland, and at Ravenscraig, a slate-grey PV roof will be featured.

Forty-eight Tigh Grian homes form Scotland's first housing development with the components manufactured off-site to the Scottish Gold Standard of Sustainability, for Link Group Ltd and Paragon Housing Association. The development, in Queen Street, Alva, Clackmannanshire, is supported financially to the amount of £2.28 million by the Greener Homes Initiative of the Scottish Government. The landowner, the local council, sold the site for £1 on condition that it would determine who should live there.

The residents of the 1-bedroom flats and 2-bedroom semi-detached houses should save about £1,000 a year in energy costs on average, and benefit from comfortable, warm homes.

Triodos Bank has provided £2.3 million towards this project, which has demonstrated construction time 50% shorter than for a conventional build.

#### *4.7.10.2 Pointer for Calon Cymru*

Tigh Grian homes, at the roll-out phase, are energy-efficient but need public subsidy to be accessible as affordable dwellings.

## **4.8 Common Features**

Two names occur again and again as funders of low-impact development in the UK – the Dutch bank Triodos, and the Ecology Building Society. The Co-operative Bank used to have an ethical and environmental remit, but that was before the problems which almost destroyed it. In 2013, four years after taking over the Britannia Building Society, the bank was revealed to have a £1.5 billion black hole at its heart.

Private money is important at developments of fewer than ten homes. On larger developments of low-impact homes, not constructed by commercial builders, public subsidy appears essential. So why not rely wholly on commercial builders? Long-term affordability is a major reason. At LILAC, RUSS, Tigh Grian and Saffron Lane, the intention is for the homes to remain affordable to future occupants. A commercial builder who imposed resale caps would be restricting the pool of buyers, with a negative impact on profitability.



**Table 6 Some characteristics of UK low-impact developments considered in this report**

Name	Location	Country	Number of homes	Main funder	Aid from national govt?	Aid from local govt?	Public fund raising?	food production?
Greenham Reach (Ecological Land Co-operative)	Devon	England	3	Ecology BS			Yes	Yes
Hockerton	Nottingham-shire	England	5	Private/ Co-operative Bank/ Ecology BS				Yes
Western Solar	Pembroke-shire	Wales	6	Private/ HSBC				
Lammas (Policy 52) <sup>1</sup>	Pembroke-shire	Wales	9	Private	Yes <sup>2</sup>			Yes
LILAC	Leeds	England	20	Triodos Bank	Yes	Yes	Yes	Yes
RUSS <sup>3</sup> (planned)	Lewisham	England	33	Triodos Bank/ Ecology BS	Yes		Yes	Yes
Tigh Grian	Clackman-nanshire	Scotland	48	Triodos Bank	Yes	Yes		
Saffron Lane	Leicester-shire	England	68	East Midlands Homes/ Westleigh Homes	Yes	Yes		(Yes) <sup>4</sup>

<sup>1</sup> Policy 52 of Pembrokeshire County Council / Pembrokeshire Coast National Park Authority was a precursor of the Welsh Government's One Planet Development policy.

<sup>2</sup> The Lammas project received £346,935 from the UK Government for the communal hub building.

<sup>3</sup> RUSS has support from two levels of local government, the London Borough of Lewisham and the Greater London Authority.

<sup>4</sup> At Saffron Lane, residents have access to a community farm, but it is not an integral part of the development.

Source: Compiled from information released for each project



# Section 5 Obstacles and Challenges

## 5.1 Fear of Change

Factual explanations of the need for change are rarely effective because of ‘confirmation bias’, the tendency to dismiss facts which do not accord with entrenched opinions. Instead, people select facts and opinions which confirm their existing views.<sup>76</sup> Pilot projects which test new proposals have a dual role, (1) to test policies which could later be rolled out on a larger scale and (2) to learn from the results, whether positive or negative overall, and disseminate them through, for example, open days, training courses, media articles and academic treatises.

For opponents of a land-based venture, such as a sustainable neighbourhood, the experience of watching it develop, and of being able to interact with it, can change some minds. This happened around the Lammas smallholdings in Pembrokeshire, in that initial strong opposition became diluted, but has not entirely disappeared.<sup>77</sup>

In the case of One Planet Development, despite its status as a policy of the Welsh Government, it has struggled against opposition from elected members of local planning authorities (LPAs) and from people living near proposed One Planet Developments. At Rhiw Las, Carmarthenshire (see 1.1, 1.4, 2.5.2, 4.7.2) some local residents could not understand why the LPA could recommend approval for smallholdings when farmers on much larger holdings could not make a living without hefty public subsidies. Other residents felt aggrieved that they had been refused permission for a dwelling for a son, daughter or other relative with strong local connections, but here was the LPA wanting to allow newcomers to build on a literally greenfield site.

## 5.2 The Exorbitant Cost of Land

As discussed in Section 3, ‘The Land Conundrum’, land is an investment class and this inflates its value. Agricultural land in particular carries tax privileges as well as entitlement to EU subsidies. The political uncertainty at the time of writing means that it is impossible to know whether subsidies will continue after the present deal ends in 2022. If the UK has exited the EU, would the domestic government replace subsidies? If the UK is still attached to the EU, what shape would a new subsidy

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<sup>76</sup> “I know that most men—not only those considered clever, but even those who are very clever, and capable of understanding most difficult scientific, mathematical, or philosophic problems—can very seldom discern even the simplest and most obvious truth if it be such as to oblige them to admit the falsity of conclusions they have formed, perhaps with much difficulty—conclusions of which they are proud, which they have taught to others, and on which they have built their lives.” – Leo Tolstoy, in *What is Art?*, 1897.

<sup>77</sup> ‘Lammas – a Pioneering Low Impact Development: Conflict and Emotion – Exploring the Feelings and Needs Behind Local Opposition to Lammas, a Proposed Ecovillage to be Developed Near the Southwest Wales Village of Glandŵr’, dissertation by Katherine Shaw, University of Wales, Lampeter, March 2009.

regime take? Any sharp fall in subsidy income could result in more farmland coming onto the market, particularly if there is a change of UK government, and the new government chooses to reduce the tax benefits of holding land. Currently, though, the cost of land adds to the difficulties of funding a development.

### 5.3 Funding

The UK arm of the Dutch **Triodos Bank**, and the **Ecology Building Society**, would both consider lending on a 'sustainable neighbourhood' project. Individual borrowers could apply to Ecology Building Society, but Triodos deals with organisations. The table in 4.8 above shows the important role of both these financial providers in funding low-impact, environmentally sensitive housing schemes.

The **Robert Owen Community Banking Fund**, based in Newtown, Powys, makes ethical loans to new and existing businesses in Wales, and for retrofitting homes for energy efficiency, and for community energy schemes. There are separate funds for mains gas connection in Flintshire and for home improvements in Powys. The emphasis is more on improving existing homes and infrastructure than on new construction.

**Unity Trust Bank** has a focus on positive social impact, and does lend for property development: between £150,000 and £10 million, loan-to-value up to 70%, interest rate typically 2% to 3%.

**Charity Bank**, owned by almost 20 trusts and foundations including the Charities Aid Foundation, Esmée Fairburn Foundation and the Tudor Trust, lends £50,000 to £3.25 million to charities and social enterprises, and more in partnership with other lenders.

**CAF Venturesome**, the Charities Aid Foundation's bank, makes unsecured loans to charities and social enterprises, including loans of £20,000 to £350,000+, specifically to community land trusts. This bank has lent to Transition Homes CLT for its planned 27 homes at Clay Park, Dartington, Devon.

A **community share offer** is feasible if the issuer is constituted as a community benefit society (see 7.5 below). The Ecological Land Co-operative in England completed a share offer on June 12 2017, raising £440,151 in ten weeks towards the creation of new smallholdings. The Ecological Land Co-operative enables new smallholders to live and work on holdings of 12 acres or less. The first group of smallholdings is at Greenham Reach, at Holcombe Regis in Devon. There are three holdings ranging from five acres to nine acres. Each has temporary permission for a dwelling, granted for five years on April 18 2013. For peace of mind, the residents need permanent permission, which the co-op is working to obtain.

The co-op has had to buy the 22 acres of land, and through a community share offer raised the just over £328,000 required to buy and prepare the site. Two of the holdings have been sold in a rent to buy scheme for £14,400 each, which secures 20% of the property, with the balance of the £72,000 total (plus interest at 6%) purchased over 25 years at £400 a month. The remaining holding is rented.

The purchasers are offered 150-year leases. There is road access, an internal stone track, and a shared barn. Solar energy and rainwater harvesting contribute to the resilience of the project. The co-op provides a year's business mentoring via the linked Ecological Land Trust.

There was no shortage of applicants for the three holdings. The first attracted 55 expressions of interest, 26 of which became full applications. The successful purchasers can sell, but the price is capped at the purchase price times the Consumer Prices Index change since the purchase date, plus the value of any improvements made. The vendor's share depends on how much of the lease they have bought.

For the co-op, the investment has to cover a lot more than the land: infrastructure and utilities, depreciation of utility installations, professional fees, staff costs, interest and bank charges. The co-op made an operating loss of £23,240 in 2014 and expected to incur losses in the following two years, before moving into profit in 2017.<sup>78</sup> The co-op's progress has been fuelled by successful share sales to sympathetic members of the public. The experience of Awel Co-op in community wind power is similar. The two Enercon wind turbines near Pontardawe, north of Swansea, have combined capacity of 4.7MW. Funding included £2.26 million from community share sales, a £5.25 million 15-year loan from Triodos Bank, and £3.55 million in bridging finance from the Welsh Government.

Charities and social enterprises need to look to their constitutions and governance documents, to check what they must do before taking out a loan. Charity Bank lists five common issues:

- Governance documents preventing the organisation from borrowing money.
- Difficulties resulting from legal structure. Registered charities must obtain written financial advice before signing up to a loan secured on property, for example.
- A charity buying property without checking that the process accords with the requirements of the Charity Commission.
- Trustees taking on personal liability for a loan. In an unincorporated organisation, trustees have joint and several personal liability.
- Problems with the registration of property offered as security for a loan.

Clearly expert advice is vital.

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<sup>78</sup> Ecological Land Co-operative Business Plan 2015-2020, p.23.

## 5.4 Avoiding Governance Failure and Conflict

Unconventional forms of housing organisation can contain the potential for conflict.

### 5.4.1 Leaseholds Creating Complications

#### 5.4.1.1 Conflict over Ownership Rights

The precursor to Wales' first One Planet Development was the Lammas eco-hamlet at Tir y Gafel, Glandŵr, Pembrokeshire. This received permission under Pembrokeshire's policy 52. The founders put huge effort into establishing nine smallholdings and a central hub building, and in 2016 and 2017 after a decade, just when residents might have expected the workload to ease off, an unexpected conflict caused distress.

Residents of two of the nine households, who at the time sat on the management committee for Mentrau Effaith Isel Lamas Cyf /Lammas Low Impact Initiatives Ltd, the industrial & provident society owning the freehold, decided without consulting the other plot holders (according to other leaseholders) to change their leases, in their own favour.<sup>79</sup> This is a governance issue: decision-making by committee led to a change which threatens the integrity of the whole undertaking.

Three residents, two from 'plot x' and one from 'plot y', who were members of the management committee at the time, drew up new leases which they attempted to register with the Land Registry and which gave them, as tenants, more rights than in the original leases. They also engaged the services of a solicitor. Other residents said they were unaware of this, and they were startled when the solicitor sent Lammas Low Impact Initiatives a bill for £2,529 in connection with the preparation of the two new leases.

#### 5.4.1.2 Special General Meeting

A special general meeting<sup>80</sup> on May 2 2017 considered these issues, which threatens financially to derail the whole Lammas project and with it a beacon of low-impact living. The meeting agreed the following resolutions

1. *"That in issuing themselves and registering "new leases" without consulting the other ecovillage residents, [three persons] did not follow due process (in terms of transparency, inclusivity and accountability)." Agreed by 18, with five against and two abstentions.*
2. *"That in issuing themselves and registering "new leases" without the knowledge, approval or consent of the other committee members or other leaseholders, [three persons] have failed to disclose their interest in this matter and have broken rule 43."*

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<sup>79</sup> Document which the author has seen but which is not in the public domain.

<sup>80</sup> <http://lammas.org.uk/en/sgm-background-information/>

This rules states that “a Committee member shall declare an interest in any contract or matter in which s/he has a personal, material or financial interest, whether directly or indirectly, and shall not vote in respect of such contract or matter except where that interest is shared with a majority of the other members of the Committee.” Again 18 were in favour. This time six were against, and one abstained.

3. *That in issuing themselves and registering “new leases” without the knowledge, approval or consent of the other committee members or other leaseholders, [three persons] have breached the trust that was placed in them when they were elected as committee members of the Society.* Agreed by 20, with five against and no abstentions.
4. *That when signing the “new leases”, [three persons] were not acting on behalf of the Society, nor the community. The Society considers that it did not consent to the “new leases” and does not recognise them as having any legal standing or validity.* Votes were 18 in favour, four against and two abstentions.

#### **5.4.1.3 Volunteer Structure may not be Sufficient**

The bad feeling at Lammas highlights the importance of:

- Having an independent person to be the clerk who takes minutes and circulates them swiftly to all society members. If a reliable volunteer is not available, a salary for the post should be included in the management plan.
- Setting out the parameters for delegated decisions, so that it is clear when one or more committee members are overstepping their authority and when any resulting decisions are invalid.

Even with precautions such as these, it can be possible for one or a few individuals to cripple a whole project by identifying and exploiting loopholes, or even by out and out fraud. Management by a governing group consisting entirely of volunteers, may not be robust enough to withstand challenges. For most group members on a One Planet Development, their main pre-occupations are the land-based enterprises on their plots, leaving little time for constant administrative oversight.

#### **5.4.1.4 Discord is Expensive**

While all members of a group can share the same objectives at the start of a project, they may diverge over time. This is a potentially negative aspect of pooling One Planet Development reporting data across several dwellings, because if some residents decided to back-slide, the others might not be able to compensate sufficiently, and the resulting disharmony could threaten the whole project. As well as fractured relationships, there are legal bills to pay out of small cash resources, which in the case of Lammas could exceed £15,000. The whole idea of relying directly on the land for household needs means that cash surpluses are small, and not geared to lawyers' hourly rates. The low-cash lifestyles of OPD participants mean that they

have to minimise financial transactions with, and demands from, the conventional economy.

One of the smallholders who opted to try and register a new lease commented that “individual agendas and personality types have risen to fill the vacuum that frameworks for functionality may have prevented”.

“Everyone believing and thinking the same thing about the legislative furniture is pretty fundamental,” this participant said. “So this sort of clarity needs to be in place first and everyone be on the same page, so to speak. Running a project is quite different from the visionary set-up stage. The skills and frameworks needed are different. I don’t think Lammas folk realised this. I think they assumed that the skills that made the project happen could continue and make the project run. I think this is a mistake.”

This individual says there is a lack of financial policies, no proper reporting, no job descriptions. Asked if they would prefer the holdings to be freehold, this was the response:

“I think that managing commons is difficult if everyone is freehold. An option would be to have communal areas leasehold and plots freehold... Probably, I feel, the best outcome would be to have finely tuned perpetual/ 999 year renewable leaseholds that embody the benefits of leaseholds and protect the tenant better than freeholds might. This does require a lot of massive dedication to detail.”<sup>81</sup>

Potential for conflict might be lessened if each household purchased, from a community benefit society, for example, their own freehold block of land, subject to planning conditions to control usage. The community benefit society could retain ownership of part of the site, for communal buildings or ventures, funded with share equity from members.

#### **5.4.2 Freeholds for Simplicity**

Rhiw Las is a group of four One Planet Development households on 21.5 acres near Whitland, Carmarthenshire. Each of the four five-acre plots is owned freehold by the respective plotters, and there is also a management company (Rhiw Las Ltd) of which all adults on site are members and directors. Rhiw Las Ltd owns a large agricultural barn (which was built by the previous owners), a small amount of land around the barn, and the trackway into the site. It conducts no business other than maintenance works.

Erica Thompson, co-founder of Rhiw Las, explains the decision making behind their governance decisions.

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<sup>81</sup> Leasehold enfranchisement is a potential issue, see 5.5.2 below.

#### *5.4.2.1 Legal Structures: Land Tenure*

“We considered various legal structures including leasing rather than owning the plots (as is done at Lammas, for instance), or holding and managing all or most of the land in common, through the management company. Much of the discussion centred around how to ensure that each household would act in a way acceptable to all the others; for example, not erecting tall structures which would shade others’ sunlight or not selling on their plot to someone disliked by the others. In the end, however, we felt that it was best to keep everything as simple as possible and not impose any additional conditions, on the basis that

- a) The OPD planning permission conditions would be sufficiently onerous to ensure that everyone would in general be doing things which were acceptable to all;
- b) Extra conditions would only be worth imposing if they were genuinely going to be enforced by the group;
- c) You can’t legislate people to be good neighbours;
- d) A leasehold structure runs the risk of the lease becoming invalidated if any conditions are breached.

Therefore, we chose a simple freehold structure.”

#### *5.4.2.2 Legal Structures: Role of the Management Company*

Erica Thompson continued:

“We wanted the management company to be

- Able to hold land and apply for planning permission;
- Able to be dissolved and return money to the households in the event of failing to gain planning permission;
- Democratic and with equal decision-making power for all members;
- Able to take on an “asset lock” after gaining planning permission, to protect the common infrastructure;
- Low in running costs.

“We took advice from the Co-operative Hub and considered various options including CIC [community interest company]; community benefit society; and co-operative society; and private company limited by shares or by guarantee. We concluded that for simplicity, cost, and reversibility it would make most sense to be at least initially a company limited by shares and duly set up Rhiw Las Ltd. We used simple template articles of incorporation that enacted as far as possible equality between the members. Having gained planning permission, we are now in discussion about the appropriate long-term structure for Rhiw Las Ltd and expect this to be a co-operative society, but will take further advice before committing. Again, simplicity will be of high importance and we will not use the new structure to impose any restrictions on members. We did not consider charitable structures due to the bureaucracy and overheads, and because we did not wish to solicit charitable donations.”



#### **5.4.2.3 Financial Implications**

“The ongoing cost of running a simple company limited by shares is the £13 fee to file the annual return online with Companies House. For a co-operative society in the lowest asset category there would be a £65 per year fee to the Financial Conduct Authority,” Erica said.

“Application fees for a new society would be £40 if a suitable set of model rules could be found, or £120 if small modifications needed to be made to a template.

“The only cost implication of the structure that we have discovered so far is the insurance. Initially we had only public liability insurance, and insurance for the barn in case it were to burn down. Upon becoming a limited company, we were then required also to hold employers liability insurance (despite having no employees) which has doubled our annual premium.

“In summary, our advice to anyone in a similar position would be to keep the structure as simple as humanly possible while achieving the most important aims, and not to attempt to legislate anyone to be good neighbours.”

## **5.5 Regulations**

### **5.5.1 Regulation v. Affordability**

Tensions between regulation and affordability cannot be avoided, but low impact developments can be destroyed at inception if building, infrastructure, water supply and other regulations are applied too zealously. There is a case for developing subsets of regulations for low-impact projects.

The Ecological Land Co-operative’s three smallholdings at Greenham Reach, Devon, share a rainwater harvesting system with 20,000 litres of storage above ground. Water passes through sand filters into the dwellings, which have ceramic filters. Alex Massey, water engineer for the scheme, reported that the environmental health department monitoring the project required the sand filters to be changed because of concern that the task of maintaining them would be beyond the capabilities of the residents, even though no technological expertise was required.

In Wales, all new homes must be fitted with sprinklers, adding between 1% and 2% to build costs. The annual maintenance cost is typically £75 to £150.<sup>82</sup> These costs are relatively small, but far from irrelevant when affordability is prejudiced by high land costs.

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<sup>82</sup> Figures from Dorset and Somerset Fire and Rescue Service.



Regulations around construction methods are a barrier to progress. As the Welsh Government's 2016 report *Evaluation of Co-operative Housing Developments in Wales* commented:<sup>83</sup>

"Some of the citizen-led schemes have been exploring more creative and novel methods of construction, such as hay bale or yurt homes, as a means of low-cost, low-impact energy efficient homes. Benchmarking these plans against typical housing standards is more difficult, and it is a concern for some of the co-operative groups that the regulations may not be flexible enough to allow for these homes even though the members themselves feel that they are knowingly accepting the advantages and disadvantages of these designs."

The balance between construction and safety regulations and the costs associated with them, and the need to build affordable, sustainable homes quickly, is difficult to maintain, but some experimental leeway would help broaden the range of construction methods available to self-builders initially, so that their benefits can be assessed over time and, if appropriate, the regulations could be amended.

### 5.5.2 Less Control over Affordability

Maintaining affordability into the future is a major challenge.

The current UK government's proposal to ban leasehold sales of new houses in England has not been detailed yet, and it is not clear if the Welsh Government would follow,<sup>84</sup> but unless there are exemptions for charities and not-for-profit organisations, such as community land trusts, it will be difficult to enforce restrictions on sale prices. Existing rules enabling leasehold enfranchisement after 21 years already make leasehold tenure a weak means for freehold owners to exert long-term control over property (unless the freeholder is exempt by virtue of being the Crown, the National Trust or a charitable housing trust, or being in a cathedral precinct, or another of the small number of exemptions).<sup>85</sup> **The National Community Land Trust Network, based in England, is lobbying government to exempt community land trusts from a ban on leasehold sales, and from leasehold enfranchisement, so that their homes can remain affordable over the long term.**

Shared ownership schemes – part rent, part buy – allow people to buy between 25% and 75% of a property and rent the rest. These properties are leasehold, usually for terms of 99 to 125 years. Lease terms vary but generally include restrictions on selling the owned portion, and restrictions on the mortgage provider's actions if the borrower defaults. Restrictions on resale (and sub-letting) remain for 21 years from the time when the purchaser has acquired 100% of the property.

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<sup>83</sup> Report by Wavehill, March 24 2016, paragraph 5.22.

<sup>84</sup> Carl Sargeant AM, Secretary for Communities and Children in the Welsh Government, has told Calon Cymru Network that he has "for some time had concerns about the manner in which the leasehold tenure currently operates" and so he has "asked my officials to consider what can and should be done to address these issues".

<sup>85</sup> See the Leasehold Reform, Housing and Urban Development Act 1993.

There are several variations on this theme: rent 100% now and buy in the future, buy now at a discount and pay the balance later; buy now and switch to renting if change of circumstances means purchasing is no longer possible. All these choices require developers and housing organisations to retain more control over property than is feasible with freehold sales.

Profit taking by big developers has contributed to leaseholds falling out of government favour, especially as public money has boosted those profits. The government-funded Help to Buy scheme has provided housebuilders with revenues of some £5.5 billion between 2013, when the scheme began, and 2017. The 'Help to Buy' scheme has raised house prices, increased dividends paid to shareholders in housebuilding companies, and boosted the annual incomes of top executives, according to an analysis in the *Financial Times* in May 2017.<sup>86</sup> The rise in prices has counteracted the benefits to purchasers, who in return for a low deposit of 5% can use Help to Buy to fund 20% of the purchase price. Help to Buy is interest-free for five years, but in year 6 the interest rate is 1.75% and from year 7 on increases annually by RPI (Retail Prices Index) plus 1%. At August 2017, that would be 4.6%, not at all insignificant. For the first purchasers, year 7 begins in 2019. For Help to Buy purchasers with leasehold ground rent liabilities which double at intervals, such as ten years, the financial pain is magnified. Even for leaseholders who want to convert to freehold, the costs involved may be prohibitive.

The UK Government's plan, announced in 2017, to stop leasehold sales of new houses in England – because some developers have tried to profit excessively – will make it much harder for organisations like community land trusts to ensure that purchased homes remain affordable in the future, unless there are explicit exemptions. As it is, the housing market is likely to divide more clearly between tenancies and owner-occupied freeholds.

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<sup>86</sup> 'Housebuilders fear subsidence when Help to Buy taps run dry' by Judith Evans, *Financial Times* May 5 2017.

## Section 6 Future Benefits

Supporters of the idea for a sustainable neighbourhood for Llandovery suggest that long-term benefits would include:

- Affordable live-work housing as part of a sustainable neighbourhood, in one location or dispersed.
- Enhanced reputation of Llandovery as a centre of the sustainable lifestyles required by Welsh Government legislation.
- More opportunities for young families to remain in or move into the Llandovery area.
- Replicability of the project to other locations.

To consider each of these in turn:

### 6.1 Affordable Live-Work Housing as Part of a Sustainable Neighbourhood

The high price of land means that a dispersed neighbourhood is more likely to be feasible than one in a single location.

Edge-of-settlement land, with its attendant 'hope value', is too expensive for smallholdings in the One Planet tradition except in the relatively unlikely circumstance of an individual with between £250,000 or so and £1 million-plus in capital who decides to submit to the rigorous management and reporting requirements of One Planet Development. That individual could purchase a smallholding or small farm on the open market.

Affordable live-work homes with sufficient land for allotment-and-orchard food-growing are much more feasible at edge-of-settlement, provided the homes and plots together cost no more than Carmarthenshire County Council's maximum reference prices for affordable housing (see table 3). These prices are linked to local incomes. On a development with a mix of similar numbers of one, two and three-bedroom homes, the mean cost for a house and its land, would be around £85,000. To achieve this without public subsidy is, to use a common understatement, a 'challenge'.

The intention to include work spaces in affordable homes stems from Calon Cymru Network's wish to reduce emissions from commuting transport. Western Solar in Pembrokeshire, for example, incorporates space for home office work in its Ty Solar houses. High-speed broadband is also essential. The Llandovery exchange is fibre-enabled, and speeds of up to 64.3 Mbps download and 17 Mbps upload are available.<sup>87</sup>

The key factors, though, are the price and availability of land.

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<sup>87</sup> Figures from [www.telephone-exchange.co.uk](http://www.telephone-exchange.co.uk), June 8 2017.

## 6.2 Enhanced Reputation of Llandovery as a Centre of Sustainable Lifestyles

The Centre for Alternative Technology (CAT) at Machynlleth, founded by Gerard Morgan-Grenville in 1973, draws about 50,000 visitors a year, benefiting the local economy.

A sustainable neighbourhood at Llandovery, reflecting similar values to CAT, could be accompanied by a permanent display, possibly in one of the town's empty shops, or by a section in the town museum, if it could acquire suitable premises. Training courses and demonstrations could be organised from a permanent venue. These ventures would add to the numbers of visitors coming to Llandovery, and could help extend the season by taking place throughout the year.

Educational events could be run by several organisations, including the Brecon Beacons National Park Authority. Llandovery itself borders the park. The public school Llandovery College is supporting the principles of sustainability and in July 2017 hosted the Harmony in Food and Farming Conference.

Even a small development of 12 homes, as is possible at Dolau Fields (see 9.3.2 below), would have an impact on the town.

The possible site at Llanwrda (9.3.3) would give the opportunity for an exhibition about the life and legacies of the benefactress Letitia Cornwallis, who has undeservedly sunk into historical obscurity, as well as featuring notable people with local links such as Sir Rhys ap Iosaf and Owain Glyndŵr. A tourism initiative with the Heart of Wales Line Development Company (DevCo) could create new employment in Llanwrda.

## 6.3 Opportunities for Young Families to Remain In or Move into the Llandovery Area

### 6.3.1 More Fruit and Veg Essential

The housing waiting list figures (see 4.3 above) show that there is unmet demand for over 100 one-bedroom homes, which are usually starter or retirement homes. Demographically, Llandovery needs a higher proportion of young adults (see 2.6.1 above) but currently lacks a wide range of employment to attract them.

A sustainable neighbourhood could trigger ancillary enterprises in construction, renewable energy, food processing, education and training and tourism, for example. Land-based enterprises would be the foundation. Conventional wisdom since 1945 has been to intensify agricultural production with agrochemicals and powered machinery, to reduce labour costs and apparently achieve greater productivity. This is an illusion because the 'externalities' such as soil compaction and erosion, biodiversity loss and community decline have not been counted.

Food availability specialist Amber Wheeler explains just how vulnerable Wales would be to interruptions in the supply of fruit and vegetables. She told Calon Cymru Network that:

“We have a large fruit and veg deficit in Wales in terms of consumption, production and availability. People in Wales are eating less and less fruit and vegetables and the narrow, consumer-focused 5 a day health promotion campaign has failed to increase consumption so far. We need a new approach in which increased production will play a part in driving up consumption.

“When the 5 a day campaign was launched by the Department of Health in 2003, 39% of people in Wales were estimated to eat 5 a day compared to 32% in 2015,” said Amber.<sup>88</sup> “More recent data, using a different survey technique, indicates that the amount consumed is likely to be even less, only 24% of people eating 5 a day.”<sup>89</sup>

“The message is clear: targeting consumers alone, without engaging with the rest of the food system has been insufficient to produce a change in eating behaviour in Wales and the rest of the UK. There are many now arguing that a systemic approach is needed to increase fruit and vegetable consumption.<sup>90</sup> This would mean all in the food chain working together to actively improve health. In the case of fruit and vegetables this means a diverse horticultural sector growing more fruit and vegetables, alongside imported fruit and veg, to be distributed by a food system in which more retailers stock more fruit and veg in more prominent and diverse ways, more veg in meals eaten out, more fruit and veg in procured meals and so on as illustrated by the Peas Please campaign.”<sup>91</sup>

According to the most up to date Welsh agricultural statistics 1,599 hectares out of 1,842,878 hectares of agricultural land produces fruit and vegetables.<sup>92</sup> “This represents less than 0.1% of land growing food that is essential for the good health of the nation. Translated into nutritional requirement this is enough to supply 5% of the nation’s 5 a day.

“If we were to plan for the health of the nation and scale up the individual nutritional requirements to population, then for fruit and vegetables the Welsh annual population requirement would be 654,909 tonnes (5 a day including 35% waste from farm to fork). To produce this in Wales, at a yield of 18 tonnes per hectare, would require 36,384 hectares of land, that’s almost 2% of the total agricultural land area or 10.5% of the Grade 1-3 land, 20 times the amount currently. However, recent public health guidance adopted in England and Wales, in the form of the new Eatwell

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<sup>88</sup> *The Welsh Health Survey 2015*, Welsh Government

<sup>89</sup> National Survey for Wales, Welsh Government, 2017, [http://gov.wales/statistics-and-research/national-survey/?slideId=2&topic=population\\_health&tab=el\\_home&lang=en](http://gov.wales/statistics-and-research/national-survey/?slideId=2&topic=population_health&tab=el_home&lang=en)

<sup>90</sup> *Veg Facts: a Briefing by the Food Foundation*, 2016.

<sup>91</sup> <http://foodfoundation.org.uk/peasplease/>

<sup>92</sup> Welsh Agricultural Statistics 2015. Welsh Government, <http://gov.wales/docs/statistics/2015/151028-welsh-agricultural-statistics-2014-ency.pdf>

Guide,<sup>93</sup> has raised the bar, increasing the 5 a day requirement to 7 a day. This obviously translates to a greater requirement: 896,497 tonnes, 49,805 hectares or 2.7% of agricultural land, 29 times more than now. This is not an argument for an attempt at 100% self-sufficiency. It just serves to illustrate how little of the requirement Wales currently produces, that land availability is not a constraining factor, and that Wales should be producing more fruit and vegetables.

“There is insufficient data on fruit and vegetable availability in Wales but UK data shows that there are not currently enough fruit and vegetables in the system for the UK population to meet its 7 a day requirement. To do this would require 18.6 million tonnes of fruit and vegetables (including 35% waste). Total availability, production and imports, minus exports, is only 8.8 million tonnes,<sup>94</sup> meaning we have a UK fruit and vegetable deficit of 9.8 million tonnes. If we maintain the current home production to import ratio (57% home production for veg and 18% for fruit as percentage of supply)<sup>95</sup> we still need to produce 3.7 million tonnes more to fulfil this requirement. This translates (at an average yield of 18 tonnes/ hectare) to another 205,506 more UK hectares coming into production. There is a clear need for the expansion of horticultural production in Wales and in the UK as a whole.

“We need a food system that works together to get people eating more fruit and vegetables. A diverse Welsh horticultural sector producing more fruit and veg, feeding into a food system that is making fruit and veg more available, will be instrumental in achieving the change in diet and improved public health that is necessary and which consumer focused campaigns alone have failed to do so far,” Amber concluded.

If agricultural colleges throughout Wales developed, increased and promoted their range of horticultural, agroforestry and agroecology courses, this would contribute to raising the profile of horticulture among the farming community, and create space where established and new participants in land-based industries can meet. Coleg Sir Gar in Carmarthenshire, which already has links with the National Botanic Gardens, could take a leading role in these activities.

### 6.3.2 The Many Benefits of Small Farms

Small farms have been under-valued. A new report finds that small farms provide high quality food, generate desirable employment and provide multiple social and environmental benefits – all of which harmonise with the Well-being of Future Generations (Wales) and Environment (Wales) acts.

The report, *A Matter of Scale: a study of the productivity, financial viability and multifunctional benefits of small farms* by Rebecca Laughton,<sup>96</sup> reveals the findings

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<sup>93</sup> *The Eatwell Guide: how does it differ to the eatwell plate and why?* Public Health England, 2016.

<sup>94</sup> *Food Statistics Pocketbook*, Department for Environment, Food and Rural Affairs, 2015.

<sup>95</sup> *Horticulture Statistics 2015*, Department for Environment, Food and Rural Affairs, 2016.

<sup>96</sup> Published by the Landworkers' Alliance and the Centre for Agroecology at Coventry University. The farms are 20 hectares or less.

from a study of 69 small agroecological farms, all under 20 hectares and many less than 5 hectares. Many of the benefits of these farms are difficult to quantify using conventional measurements, but include interesting and often year-round work, fresh produce available to the local area, care of ecosystems including soils, and training in agricultural skills. New small farms support the local economy and help to counteract the loss of population associated with industrial styles of farming. The farms in the study had an average of 3.2 workers per hectare, on a full-time equivalent basis, while the UK overall had one worker for 36.13 hectares of farmland.<sup>97</sup>

Despite the benefits cited, farms under 5 hectares do not qualify for subsidies under Pillar 1 – direct payments -- of the EU's Common Agricultural Policy and therefore are discriminated against. Almost eight in ten of the study farms, 78%, received no subsidies. Brexit means that post-2022, when the current subsidy regime is likely to end, UK nations should be able to support agriculture in ways more in tune with the imperatives for lower greenhouse gas emissions and better care of soil and water resources.

The report says that productivity data for 18 indicator vegetable crops showed that small-farm yields for crops requiring intricate husbandry and hand picking were higher than those on non-organic farms growing vegetables on a field scale. For those small farmers who would like to expand, lack of affordable land, and of capital, are big barriers. Difficulty of finding casual labour is another, attributed at least partly to the complicated responsibility employers have for paying national insurance and income tax on behalf of casual staff.

Suggestions in the report include a new planning category for agricultural self-build eco-hamlets in England. Wales already has such a category in the One Planet policy, but England does not. Other proposals are for capital grants to new small-farmers, and for local authority farms (those that have not already been sold off) to be divided into smaller units, as tenants retire. Carmarthenshire has retained a county farms estate,<sup>98</sup> but the recent practice upon a holding falling vacant has been to sell off the house and a few acres to 'lifestyle' purchasers and to offer the bulk of the land to neighbouring farmers (for whom more land often means more subsidy).

It is still a common argument that small farms do not provide enough income for a 'modern' standard of living, and the report has found that more in seven in ten of the farms, 72%, recorded net income of £10,000 a year or less. When the value of produce consumed was included, 63% were below the £10,000 level. It was not clear whether all the respondents were reporting on the same basis. Some included their own wages in farm costs, before arriving at net income, but it was not

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<sup>97</sup> 'Farming Statistics: provisional crop areas, yields and livestock populations at June 2016', Department for Environment, Food and Rural Affairs, October 13 2016.

<sup>98</sup> Carmarthenshire County Council has 26 farms on 2,502 acres, 834 acres of bare land mostly let to farmers, 152 acres let on grazing licences, and 100 acres of woodland.

unequivocal that all had done this. The farms with the highest incomes were all selling direct to the public through box schemes.

Some eco-developments, such as The Wintles in Bishop's Castle, Shropshire, provide allotments for residents. This does not necessarily result in optimal land use, as not all residents are able to take advantage of the opportunity. Any scheme which includes land for growing could give priority to residents, but offer unused land to small farmers wanting to start up or expand.

Improved service on the Heart of Wales railway would help such economic development, and the trains can carry light goods such as food, but there is a 'chicken and egg' issue – train operators want to see evidence of higher passenger demand before adding services, but this evidence is problematic to collect while the services do not exist. There is a case to be made for a public subsidy to encourage train operators to provide services ahead of actual demand.

#### **6.4 Replicability of the Project to Other Locations**

The lived experience of residents in a sustainable neighbourhood would indicate its replicability to other locations, although every location is unique. Welsh legislation, and expected climate change, require deep systemic reductions in the resources people consume, and therefore a sustainable neighbourhood has the potential to be a 'blueprint' for changes elsewhere.

Questions to answer over time include:

- How affordable are the homes to live in over 10, 20 and 30 years?
- What are the life spans of the main components?
- How much have allotments and orchard ground contributed to the communal and hyper-local economies?
- To what extent has the demographic balance improved?

Answers to these questions, and assessments of the responses of the wider local population to this type of new development, can be gathered annually, and a full evaluation could be undertaken after a decade.



# Section 7 New Organisations:

## Community Land Trusts

### 7.1 Tasks for Calon Cymru Network

Calon Cymru Network is a small group with three directors, 14 members and 154 friends. The friends are kept up to date with Calon Cymru's activities by email and social media. The network is essentially a voluntary grouping of professionals who donate their time. In 2016-17 a grant from the Brecon Beacons National Park Authority employs a part-time (20% FTE) administrative officer, part of whose job is to source funding for practical projects to accord with the Well-being of Future Generations (Wales) Act and the Environment (Wales) Act, and to increase the economic capacity – sustainable, of course -- of 'left behind' rural settlements in the corridor of the Heart of Wales railway.

Calon Cymru as currently constituted is not well equipped to initiate and manage projects with budgets of more than about £10,000, because it does not have suitable funding streams or any full-time staff. For the directors, Calon Cymru provides them with an opportunity to advance rural development but, with the exception of the one retired director, does not replace their own business activities. The ongoing role of Calon Cymru is strategic, but not operational.

The Heart of Wales Line Development Company (DevCo) shares Calon Cymru's keenness to reinvigorate the communities along the line. The two organisations have already agreed to co-operate on regeneration projects.

### 7.2 Expertise Required

Low-cost sustainable homes and associated rural land uses are not a 'profit opportunity', which is a fundamental reason for their scarcity. The operational organisation should therefore be not-for-profit but should raise sufficient revenue to pay professional salaries to a project manager and a finance manager, with additional budgets for legal and technical advice.

The project manager and finance manager would need to deputise for each other.

The average UK annual salary for a project manager is £35,808, according to payscale.com in May 2017. Average salary for a finance manager is £38,319. The jobs site indeed.co.uk reckoned the average salary for a project manager in construction to be £46,020, based on 261,774 salaries notified, and £44,154 for a finance manager, based on 128,418 salaries.<sup>99</sup> Employees bring additional costs:

- Employer's National Insurance

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<sup>99</sup> As at May 26 2017.

- Compulsory employer's pension contributions, under auto-enrolment
- Work expenses and travel costs to be reimbursed
- Office rent and running costs

Engaging self-employed professionals on project contracts is another possibility. A contract manager would expect a day rate of about £360 in Wales.<sup>100</sup>

The land trusts would also need trustees. Calon Cymru and DevCo would each be represented, with other trustees drawn from their respective communities.

### 7.3 Co-operative Societies and Community Benefit Societies

The Co-operative and Community Benefit Societies Act 2014 replaced the legal form 'industrial & provident society' with two: the co-operative society and the community benefit society. The Act consolidated previous legislation concerning industrial & provident societies. Societies registered on or after August 1 2014 decided whether to be either a co-operative society or a community benefit society. Societies which pre-date August 2014 are called 'registered societies'.

A co-operative society operates for the benefit of its members, who are typically customers, employees and suppliers, although investors who are none of these can also join. Membership has to be open to everyone who meets the criteria. The society can pay interest to investors, and dividends based on transaction amounts.

A community benefit society has a wider remit, in that benefits should extend beyond members to the wider community. Such a society cannot distribute dividends but it can pay interest on members' share capital.

Community benefit societies with charitable aims can register as a charitable community benefit society with HMRC, to secure relief from income tax, corporation tax, capital gains tax, inheritance tax and business rates. Charitable aims, set out in the Charities Act 2011, are (emphases added):

1. The prevention or relief of poverty
2. The advancement of education
3. The advancement of religion
4. The advancement of health or the saving of lives
- 5. The advancement of citizenship or community development**
6. The advancement of the arts, culture, heritage or science
7. The advancement of amateur sport
8. The advancement of human rights, conflict resolution or reconciliation or the promotion of religious or racial harmony or equality and diversity
- 9. The advancement of environmental protection or improvement**

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<sup>100</sup> sjdaccountancy.com, May 26 2017.

10. The relief of those in need, by reason of youth, age, ill-health, disability, financial hardship or other disadvantage
11. The advancement of animal welfare
12. The promotion of the efficiency of the armed forces of the Crown, or of the efficiency of the police, fire and rescue services or ambulance services
13. Other charitable purposes, including the **promotion of agriculture and horticulture**, maintaining churches and chapels, provision of public amenities such as playing fields, public toilets, libraries and civic improvement schemes

A charitable community benefit society for low-impact sustainable development would fit aims 5, which includes community development and regeneration; 9, the advancement of environmental protection or improvement; and 13, activities such as promotion of agriculture and horticulture.

Trading by a charitable community benefit society must be entirely in pursuit of its aims. If not, a separate trading subsidiary must be set up. In addition, there must be an asset lock, providing that if the society is closed, its assets must go to a charity with a similar purpose.<sup>101</sup>

## 7.4 Community Land Trust: an Appropriate Structure

The structure most often created for small-scale community-based projects which include land is a community land trust (CLT).

The trust acquires freehold or long leasehold land and holds it for community benefit to ensure that no one can realise a value uplift greater than a reference amount, such as the original cost plus an inflation index like RPI (Retail Prices Index) or CPI (Consumer Prices Index), or an index for local wages.

For development operations, land trusts often work with housing associations:

“CLTs and housing associations have a lot in common and CLTs can complement the role of housing associations by bringing community led solutions to housing and other needs. Many CLTs have successfully partnered with a housing association to deliver new homes or other assets...”

(The Community Land Trust Handbook, from the National CLT Network, 2012, section 1.2)

The National Community Land Trust Network, based in London WC1, is an important source of advice, especially for CLTs in England. Recent legislation in Wales (see 1.1, 1.2, 1.3 and 1.4 above) creates different conditions which now need at least a chapter of their own.

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<sup>101</sup> The Financial Conduct Authority has information on the Co-operative and Community Benefit Societies Act 2014.

A CLT for a sustainable neighbourhood on One Planet principles would be a venture into the unknown, and would probably be subject to particular scrutiny, making effective governance paramount.

## 7.5 Legal Forms – Pros and Cons

Community land trusts are not confined to one legal form but can opt to be a

- Community benefit society
- Community interest company limited by guarantee
- Company limited by guarantee, charitable or non-charitable although even if it is not charitable there must be an asset lock.

The advantages and disadvantages of each form are summarised in the table below.<sup>102</sup>

**Table 7 Features of community benefit societies, community interest companies and companies limited by guarantee**

<b>Criterion</b>	<b>Community benefit society</b>	<b>Community interest company</b>	<b>Company limited by guarantee</b>
Membership – is it open to all?	Yes	Yes	Yes
Can the organisation be a charity?	Yes	No	Yes
Do members have democratic involvement?	One member, one vote	One member, one vote	One member, one vote
Are there flexible arrangements for trading activities?	Yes, unless a charity	Yes	Yes, unless a charity
Are beneficiaries represented on the Board?	Unrestricted, except for charities	Unrestricted	Unrestricted, except for charities
Are Board members paid?	Permitted	Permitted	Permitted
Can share capital be raised at affordable cost?	Yes, via 'withdrawable shares' which enable investors to fund community projects, as in a community share issue	No	No
Is the asset lock legally enforceable?	Yes	Yes	Yes

<sup>102</sup> Derived from section 4.2 of the Community Land Trust Handbook

What are the reporting requirements?	Regulated by the Financial Conduct Authority.	Regulated by the CIC Regulator and Companies House. An annual Community Interest Review has to be completed	Companies House and, if a charity, the Charity Commission
Are there tax benefits?	No, unless constituted as an exempt charity	No	Rates relief. Stamp duty exemption if a charity and/or a registered provider of social housing. Corporation tax exemption if a charity
Is there tax relief for donations?	Gift aid applies if an exempt charity	No	Gift aid applies if an exempt charity

## 7.6 Charity – Yes or No?

A CLT may choose to register as a charity if its aims accord with permitted charitable activities, as the table above indicates.

### 7.6.1 Advantages

- Charities can attract donations and grants as well as loans.
- Tax benefits are significant.

### 7.6.2 Drawbacks

- Regulation is heavy and a CLT must be able to prove how it is meeting its charitable aims.
- Once an organisation has registered as a charity, it cannot normally revoke that status.
- Trading is very restricted and must accord with the CLT's aims. For example, a CLT cannot build and sell dwellings on the open market, to fund affordable housing. It would have to set up a separate non-charitable venture and organise for profits to be paid to the CLT.

The administrative demands on a CLT are significant and ongoing, and the choice of legal form has repercussions for governance documents.

### 7.6.3 Governance Documents

- Statement of objectives and means of achieving the objectives
- The organisation's constitution and how to make changes to it
- Membership information, including procedures for members joining, resigning, retiring and being removed, and setting out members' rights
- Details of the asset lock and restrictions on members' access to CLT assets
- Procedures for general meetings and for voting

- Board members: procedures for appointment, removal and retirement
- Board functions: its powers, including powers of delegation; rules for conducting business including voting procedures; and rules for preventing Board members from profiting from their position
- Procedures for recruiting and employing paid staff
- Details of how to comply with reporting requirements such as annual accounts and reports
- Procedure for appointing and replacing an auditor
- Distribution of assets if the CLT is dissolved

This is a core list to which other documents may be added.

#### 7.6.4 Policies

Documented policies help to avoid conflict because rights and responsibilities are clearly stated. These are some key ones:

- Code of conduct for directors, staff and volunteers<sup>103</sup>
- Roles, qualifications and legal obligations of trustees
- Register of directors' interests
- Procedure for dealing with conflicts of interest
- Arrangements for financial decision making and setting out the limits for delegated authority
- Policy for designating and using financial reserves
- Data protection, including procedure for dealing with breaches of confidentiality

If a CLT provides housing, policies for allocations, reposessions, and disposals will be essential.

CLTs have potential in Wales to “make a useful contribution to tackling the significant and growing housing need that exists in rural communities in Wales as part of the overall co-operative/ community-led housing programme being developed in Wales,” according to a 2014 report by Nic Bliss and Alan Fox for the Confederation of Co-operative Housing, National CLT Network, and the Wales Co-operative Centre.<sup>104</sup>

The report suggests, in the executive summary, that “umbrella CLT schemes can be established in rural areas which can incubate local community-led housing activity over time”. The Welsh Government could help to develop CLTs by:

- Access to revenue start-up support through the Wales Co-operative Centre.

<sup>103</sup> The Companies Act 2006 details directors' responsibilities. Although community benefit societies are outside the remit of this Act, it is good practice for the directors' responsibilities to apply. In the case of directors of a CLT, they should promote its success and achieve high standards of business conduct.

<sup>104</sup> *The Potential for Community Land Trusts (CLTs) in Wales (incorporating current consideration of a prospective Gwynedd CLT)*

- Investment and strategic support for a revolving loan fund for co-operative/ community-led housing projects in Wales.
- Policy guidance and support to help local authorities use “innovative approaches” for developing affordable housing on Rural Exception Sites.
- Assisting dialogue between prospective community-led housing schemes and potential local authority/ housing association partners.

## 7.7 Learning from Experience: Bishop’s Castle Community Land Trust

The small Shropshire town of Bishop’s Castle, population about 1,900, 12 miles from Welshpool and 14 miles from Craven Arms, has a community land trust. The trust was created as an industrial & provident society in 2007, the year after its founders carried out a housing needs and business survey.

In July and August 2006 they delivered 1,400 questionnaires, Freepost reply envelopes and a leaflet about the land trust intention. The questionnaire was long, 41 questions on 11 pages, but achieved a good response rate of 21.6%, 302 forms.

The survey revealed that 21 of the 302 respondents, 7%, were on a housing transfer or waiting list. Seventy four households, 24%, expected to have to move in the next five years. Affordability – the lack of it -- was a big issue for the 74 who answered this question. Three-quarters of them said they could afford rent of only up to £90 a week, when at the time the average rent for a 2-bedroom property was almost £100 a week. Just 4% said they could pay more than £150 a week.

When it came to buying, 64% had price ceilings under £120,000, when the typical range for a 2-bedroom home was £127,000 to £215,000.

The idea of self-building in a community project appealed to half of the 92 who answered the question, 22% expressed interest in co-housing, and 27% in joining a housing co-operative. The big majority were keen on energy saving as well, in fact only 14 respondents said they were not concerned about saving energy.

Housing for local need emerged high on the agenda. Only 4% of respondents objected or objected strongly to construction of affordable housing for local people. Another 4% had no opinion. In contrast, 92% were in favour of small-scale affordable housing developments. Substantially fewer, 38%, supported new housing for the open market.

Several offers of help came in as a result of the survey. Thirty people volunteered to help with fund-raising, 24 with project development, 23 with project management, and 20 with building and construction. In addition, 24 people donated to the cause, giving a total of £513, with some offering more when a definite construction scheme started.

Provision of housing without jobs makes no sense, except for retirees. In Bishop's Castle several respondents anticipated needing work spaces in the following two years. Of the 302 who returned questionnaires, 124 (41%) filled in the business section and the proportions anticipating need for new work spaces were

- Storage facilities 18%
- Land with buildings 17%
- Workshop 17%
- Garaging 13%
- Office space 10%
- Organic waste disposal facilities 10%

The main occupations of respondents were professional services (17%); building, construction, plumbing and carpentry (17%); retail and repairs (15%); agriculture (14%); services (12%) and hotels, catering and tourism (10%).

Bishop's Castle is the location for two eco housing developments initiated by the Living Villages Trust, a cluster at Bells Court and phases 1 and 2 of The Wintles, on the north edge of town. The Wintles was not universally popular with survey respondents, and in fact comments revealed some opposition to it.

- "The Wintles was not for local people, that land could have been used for a mixture of houses for our own community"
- "affordable housing for local people and not eco homes at £300k"
- "need affordable housing on small scale building project ... [more] eco friendly than Wintles"
- "need homes to move on, but not in price range of Wintles"
- "two newest developments Wintles and Old Brick Meadow have no provision for affordable housing for local people"
- "in future developments where the original plans were supposed to provide affordable housing it would be important for this to be adhered to NOT as happened on the Wintles"
- "whilst commending projects such as the Wintles on sustainable grounds the scheme does not mesh with the town's built fabric"

The prices of Wintles homes remain unaffordable for people in most local employment. A 2-bedroom cottage was advertised at £220,000 in 2016, and a 3-bedroom for £270,000.

Since carrying out the survey, the Bishop's Castle Community Land Trust has built two 1-bedroom homes in the town, on a garden plot offered for £6,000 per house by a sympathetic architect living in the town. So far, these are the only houses built by the trust. One other site was a possibility, but negotiations failed because of an insurance problem. Three sites were for sale in summer 2017, one with permission



for 40 homes at £1.2 million, and two sites for 10 to 12 homes at £400,000 each, but these land prices were too high for low-cost homes.

Bishop's Castle is similar to Llandovery in many ways: similar population, rural location, and distance from other towns. Both towns now have a single part-time bank, HSBC in Bishop's Castle and Barclays in Llandovery. Bishop's Castle still has a state secondary school, but Llandovery's was closed by the education authority in 2016. Both towns have arrays of historic buildings, and a shortage of affordable homes. The eco-homes in Bishop's Castle have not eased the shortage. The challenge for Llandovery is to combine affordability and sustainability.

Jim Gaffney, proprietor of Textile Traders and chair of the Bishop's Castle Community Land Trust, helping to steer it since inception, says it is important to build community participation in a land trust, to be patient, and pay attention to marketing to keep the organisation in the public eye. The skill of working with other individuals and organisations has to be developed, because a community land trust needs support from landowners, planners, funders and builders, as well as from the local population.

It's all about partnerships.

# Section 8 Partnership Working

## 8.1 Important Links

Calon Cymru has built links with other individuals and organisations, but is not yet a recognised partner of local government or housing associations.

Although partnership working demands compromises, the benefits include wider access to funding schemes and expertise, enabling larger projects to be accomplished.

In addition to the Heart of Wales Line Development Company, important potential partners for the sustainable neighbourhood proposal are:

- Carmarthenshire County Council, as a landowner and provider of social housing.
- Other landowners with potentially suitable sites.
- Brecon Beacons National Park Authority, because the Fforest Fawr UNESCO Global Geopark, covering the western section of the national park, comes within a mile or so of Llandovery. In addition, the NPA has contributed funding for Calon Cymru Network to employ an administrative officer.
- Llandovery Town Council, as representatives of Llandovery residents.
- The Wales Co-operative Centre, for expertise on collaborative projects.
- One or more housing associations, for example Bro Myrddin.
- The One Planet Council, for expertise in tackling practical problems of low-impact development which accords with the Welsh Government's One Planet planning guidance.
- Environmentally-aware funders including the Ecology Building Society, Charity Bank and Triodos Bank.
- The National Lottery, particularly the People and Places strand offering up to £500,000 for qualifying ventures.

Individuals such as Adam Price, the Assembly Member for Carmarthen East and Dinefwr; Jane Davidson, director of INSPIRE, the Institute of Sustainable Practice, Innovation and Resource Effectiveness, at the University of Wales Trinity St David; and designers of low-cost, low-carbon homes including Mark Waghorn, Nick Dummer and Glen Peters, can all benefit the 'sustainable neighbourhood' concept.

## 8.2 Challenges and Plus Points

### 8.2.1 Challenges

Calon Cymru Network is a small organisation which depends heavily on volunteers. Scaling up operations will demand fund-raising, tight administration, and new measures of accountability.

If community land trusts (CLTs) are formed, recruitment of trustees for them will be a vital task for which professional human resources and legal advice would be beneficial.

The Welsh Government has itself identified skills gaps in what are called ‘citizen-led’ schemes, like CLTs. The expertise gaps tend to be in finance, land acquisition, and in securing partners to work with, according to a 2016 report, *Evaluation of Co-operative Housing Developments in Wales*.<sup>105</sup> The report’s recommendations include provision of additional support for citizen-led groups, and helping citizen-led schemes to find partners.

In any citizen-led scheme for which the participants are trying to work as economically as possible and without ready access to experienced financial and legal professionals, sudden policy changes are a big risk. In July 2017, for example, the UK Secretary of State for Communities and Local Government, announced a consultation on ending sales of leasehold houses in England, as a result of housebuilders’ practice of selling leaseholds to occupiers and selling on freeholds to investors, with provision for steep increases in ground rent and in the costs of buying freeholds. A prohibition on leasehold sales could have serious consequences for community land trusts, making it far more difficult to keep homes out of the open market.

### 8.2.2 Plus Points

Calon Cymru Network is not bound by established policy norms and organisational structures, and has the freedom to explore new possibilities which can appear too ‘avant garde’ for mainstream organisations. Wales’ raft of new environmentally-aware legislation poses difficulties for organisations which are steeped in old priorities, but Calon Cymru’s dedication to sustainability can win it a constructive position in the vanguard of attitude change.

Regarding CLTs, they can bring a new dimension to low-cost housing by treating homes as one element of a sustainable, resilient community, alongside other partners in construction, energy and food production, public transport and job creation, all in the context of environmental protection and climate change mitigation.

Cross-sector working has been identified as vital by Sophie Howe, the Future Generations Commissioner for Wales. Sending out her report *Well-being in Wales: Planning today for a better tomorrow – Learning from the well-being assessments*, in July 2017, she said:

“Issues are often still being tackled in isolation. PSBs [Public Services Boards] need to demonstrate a broader understanding of well-being -- rooted in all seven well-being goals and **recognising the connections between issues**. PSBs need to show how they’re identifying and exploring tensions between different issues and

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<sup>105</sup> Report prepared by Wavehill for the Welsh Government, published March 24 2016.

priorities to enable an honest discussion about new approaches that need to be taken and collaborate to do things differently.” (author’s emphasis)

Calon Cymru Network already aims to work in this holistic, connected way, focusing on ways to assist community resilience and prosperity, without taking resources away from future generations.

# Section 9 Recommendations on Likely Viability

## 9.1 The Original Idea

Calon Cymru's starting vision was:

- A group of 'One Planet' smallholdings with self-built homes, ideally within two miles of Llandovery or another station on the Heart of Wales railway, on land at the edge of settlement.
- 'One Planet' regulations, for each household to produce at least 30% of their basic needs directly from the land and the balance up to 65% indirectly from the land, for example from crafts or education, to be met on a group rather than individual basis, to allow for residents who fall ill or who become frail.
- A mix of zero-carbon and near zero-carbon homes, at affordable prices and rents, with resale restrictions to retain affordability for future occupants. The homes could be on Rural Exception Sites adjacent to settlement limits where, in theory, land could be acquired at a discount to full development value. Communal open space could be used for allotments and orchards as well as for children's play.
- Affordable homes would have space for home working – to limit polluting emissions and wasted time during commuting.
- Provision of workshops to create employment opportunities for new residents, who would improve the demographic balance. Unemployment in Llandovery is low. In December 2016 only 1.0% of residents were in receipt of Job Seeker's Allowance. This reflects the high proportion of retired people (in May 2016 28.3% were in receipt of the state pension).

The process of the study revealed the barriers in the way of this vision. They can be summarised as 'the affordability challenge'.

## 9.2 The Affordability Challenge

'One Planet' sites in deep countryside are more affordable than edge-of-settlement Rural Exception Sites because of the development 'hope value' attached to land near towns. Hope value sometimes features in sale contracts as 'overage', a supplementary payment from the purchaser to the vendor should the land receive planning permission.

The influence of hope value means that a settlement-edge One Planet neighbourhood is not affordable – in the real sense of in relation to local incomes -- unless the land is donated or acquired at a substantial discount.

Even for a Rural Exception development of affordable housing costing £70,000 to £90,000 per unit constructed, and provided with water, heat, power and drainage, the sustainability elements of food-growing and wildlife space, and homes with workspace incorporated or elsewhere on the site, could be included only at a land cost of no more than £10,000 per plot. A density of more than 25 homes per hectare (over 10 per acre) would have scant green space, and even at 10 to the acre, green space would be parsimonious. The typical density of 35 homes per hectare (14 per acre) would be too cramped for live-work homes with sufficient land for allotments and an orchard.

Sites beyond easy walking distance of Llandovery itself have been offered for sale during the preparation of this study (see below in this section). They are suited, potentially, to One Planet smallholdings but not to a mixed neighbourhood because (a) planning policy currently does not allow dwellings unconnected to land-based enterprises, and (b) the sites are remote from public transport links.

The high price of land means that a full edge-of-settlement group of One Planet smallholdings would struggle to attract mortgage funding, because a typical annual cash income for a One Planet household is in the range of £5,000 to £15,000. Monetising products and energy consumed on site adds more, about £6,000 to £8,000 a year, to give a total of £11,000 to £23,000.<sup>106</sup> Incomes right at the top end of this range are barely enough to justify an 80% mortgage on an £90,000 building plot, let alone a house as well, or enough land for a smallholding

The financial barriers suggest that the term 'sustainable neighbourhood' should encompass diverse sites:

- Rural Exception Sites at settlement edges, for homes intended to be permanently affordable to rent or buy,<sup>107</sup> funded from mixed sources including grants as well as loans. The sites would incorporate food-growing and wildlife areas.
- One Planet smallholdings further from settlement, where land is cheaper and carries little in the way of 'hope value'.

The main hope for a mixed sustainable neighbourhood on an edge-of-settlement site is on land transferred free or at a discount of 70% or more.

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<sup>106</sup> The nine households at the Tir y Gafel eco-hamlet at Llamas, Glandŵr, Pembrokeshire, had total cash incomes of £48,156 in the calendar year 2015. The food, water, drainage and energy on site contributed £58,109. The two together give a mean of £11,808. This was the sixth year of activity at Tir y Gafel, which started as bare pasture, and the enterprises on it are still developing. There is potential for incomes to grow further.

<sup>107</sup> The UK Government's opposition to leaseholds threatens to have the unintended consequence of discriminating against organisations for which leaseholds are a means to exert control over future sale prices.

If a new neighbourhood arises on dispersed sites, the separate parts would be linked primarily through the land owning organisation, which we suggest should be a community land trust registered as a community benefit society, so that it can raise capital in a straightforward way through community share issues.

## 9.3 Proposals

### 9.3.1 Community Land Trust

Establish an umbrella community land trust for the Heart of Wales railway corridor, and a local trust for the Llandovery area, initially to acquire land for components of a 'sustainable neighbourhood' in the Tywi valley near Llandovery. The trust should be registered as a community benefit society.

The sites listed (9.3.2 to 9.3.5) are potential candidates. We also considered land at Carmarthenshire County Council's Llandovery depot, but decided that it was more suited to business use because it is hard-surfaced, and currently accessible by vehicle only through the industrial area. In addition, there is a possible future site at Maes y Felin, Llandovery. This is in private ownership and could be included in the next Local Development Plan.

Several areas of farmland came onto the market in summer 2017, suitable for One Planet Developments. Two areas at Penybanc, on the northern edge of Llandeilo, were up for auction on September 22. One expanse of 23.33 acres, with water from a stream and a well, had a guide price of £120,000 (£5,144 per acre), but was unsold. A smaller section of 14.96 acres, advertised as having development potential and with natural and metered mains water, was listed at £135,000 (£9,023 per acre) and sold for well in excess, £152,000. This is £10,160 per acre, without planning permission.

Three miles south of Llandeilo, 55 acres with a natural water supply were marketed at £235,000 (£4,273 per acre). This land is west-facing, with small areas of woodland, higher and more exposed than the Penybanc blocks.

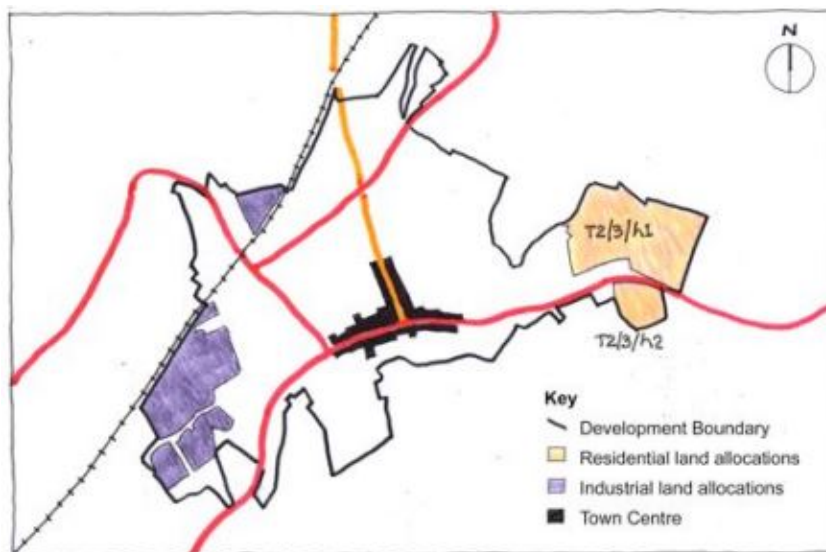
The remit for this study, though, is to find sites in the Llandovery area. There is one with an existing planning permission, Dolau Fields, and one four miles west of Llandovery at Llanwrda which is owned by a charity keen to provide good homes for the local community. The best site for an eco-hamlet is Allt Gilfach on the northern edge of Llandovery, owned by Carmarthenshire County Council but not currently available. Another council-owned site opposite the closed comprehensive school has limitations imposed by archaeological remains.

The sites are listed in order of likely timescales, with the earliest first.

### 9.3.2 Site A Dolau Fields

**Scope for affordable eco-homes with solar energy generation and community food growing area. Timescale: 2 – 4 years**

The Dolau Fields site, part of Dolaugwynion Farm off the A40 on the eastern side of Llandovery, is on the market at the time of writing, with permission for 61 homes, 12 of which would have to be 'affordable'. The proportion of affordable homes would thus be 20%, a full 10 percentage points below the current area requirement of 30%. The location of the site, in relation to the rest of Llandovery and its development boundaries, is shown below, marked T2/3/h1.



*Dolau Fields, marked T2/3/h1, is east of Llandovery against the development boundary*

The planning permission, held by the landowners LR, HM and IR Lewis, is for a conventional development of family homes.



*Plan of the development for which Dolau Fields currently has planning permission*

The site is pasture land with hedgerows and mature trees, adjoining the row of 20 homes at Dan y Crug. The application for 61 homes on 3 hectares was received by Carmarthenshire County Council on June 6 2012. An earlier application was for 76 dwellings on 3.8 hectares. The site is fairly flat with a gentle gradient towards the river Bran. Natural Resources Wales warns of flood risk should the dam at the Llyn



Brianne reservoir fail, but much of Llandoverly would be affected should such a disaster happen. A public footpath flanks the eastern side of the site, a route used by farm vehicles to access the land beyond.



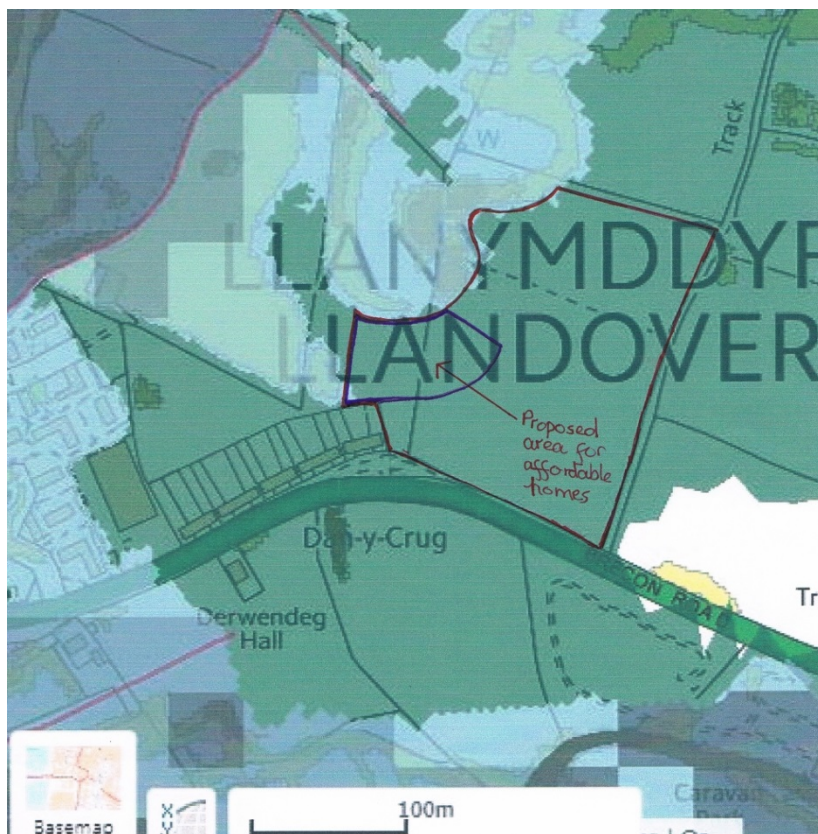
*Dolau Fields flood risk map excluding risk from reservoir dam failure. Only the north-west corner is affected*

**Key**

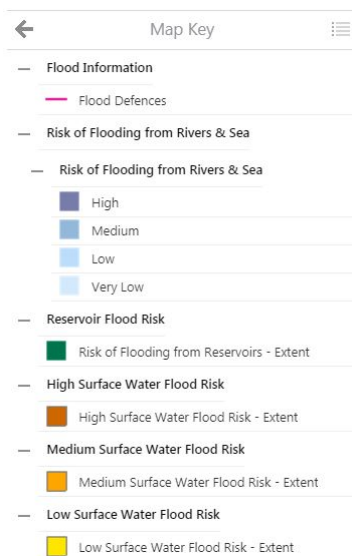
- Area of site within C2 flood zone
- Limit of C2 flood zone
- Site boundary

The latest application was for six 2-bedroom homes, 40 3-bedroom and 15 4-bedroom, in seven style variations, although all would be two-storey, with slate roofs, rendered and stone finishes, and white uPVC doors and windows. The density of 20.5 dwellings to the hectare (8.3 to the acre) would create a suburban landscape without land set aside for wildlife or food production. The houses would be built to level 3 of the Code for Sustainable Homes, and would therefore not be in the higher echelons of energy efficiency.

Permission was granted on September 17 2014, requiring work to start within five years – by September 17 2019. One condition, for a badger survey, has been lifted.



Flood risk map for Dolau Fields. Map from Natural Resources Wales. Map key below. The potential area for affordable housing is also shown.



Calon Cymru Network would propose, to a community land trust, that 12 affordable homes for rent be constructed on one acre. The homes would use photovoltaic and solar water heating panels so that residents would have very small energy bills.

A further acre would be used for an orchard and food growing area, for residents and the community. Ventures such as Black Mountain Food Hub's 'Patchwork Farm' enable small-scale and garden growers to sell surpluses through a distribution centre, which is currently at Llandeilo railway station. The 'Patchwork Farm' idea increases the provision of local foods and helps to reduce food waste.

### 9.3.3 Site B Llanwrda School

**Scope to build 6-8 affordable eco homes on the school site, and to repair a listed building which contains 6 flats, one of which is occupied by the caretaker. The other flats are unfit for habitation. Opinions differ whether they could be brought up to current standards, but there is agreement that the cost could not be justified commercially. The building and grounds could instead provide workspace, a history centre and a community food growing area. Timescale: 4 – 6 years**

The Almshouse Charity of Letitia Cornwallis owns three and a half acres in Llanwrda, within half a mile of Llanwrda railway station. The land includes the closed village school, the village playing field and children's playground, and Cornwallis House containing six flats, but in severe disrepair. About one-fifth of the site, with the village hall and car park, is leased to the hall committee for 99 years. Flood maps show that the site is outside risk areas.

Cornwallis House is listed Grade II and so is protected. The charity, which intends to retain the freehold, has obtained estimates for renovation of around £650,000, or more than £108,000 per flat. Even then, the flats would be cold to live in, expensive to heat, and would not meet modern standards. Such a project is unaffordable for the charity.



*Listed because of its scale as early social housing: Cornwallis House.*

Cornwallis House could potentially be repaired for use as craft workshops – e.g. for teaching building conservation skills -- and a historical centre remembering the benefactor Lady Letitia Cornwallis, the demolished Abermarlais mansion where she lived, and others linked with Llanwrda such as Sir Rhys ap Iosaf and Owain Glyndŵr (who may be buried under Llanwrda Church<sup>108</sup>). This is a project for which separate National Lottery funding would appear appropriate, as it involves the

<sup>108</sup> This plausible suggestion is in *The Mystery of Jack of Kent & the Fate of Owain Glyndwr* by Alex Gibbon, Sutton Publishing, 2004.

preservation of a listed building, a heritage project and workshops, with employment potential.

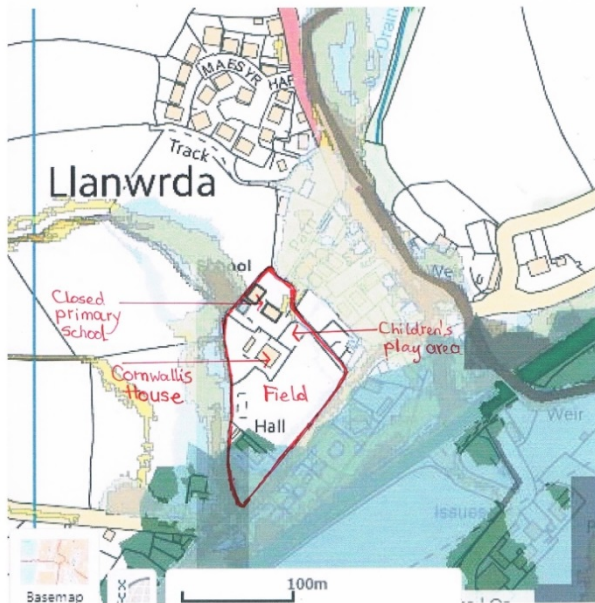
The grounds around Cornwallis House would be sufficient for a small orchard and for a vegetable growing area open to local people. Surpluses could be distributed via the Black Mountain Food Hub's Patchwork Farm, or a similar venture, aiming to expand local food supply and cut waste.

Letitia Cornwallis, who also endowed Cardigan Grammar School, left £400 for almshouses to be lived in by 'spinsters of sound repute'. The H-plan building was constructed in 1793-95, to contain four flats. The interior was altered in 1974 to create four 1-bedroom and two 2-bedroom flats. The features, according to 'British Listed Buildings', include hipped slate roofs with modillion cornices, and a centre front door to each range with radiating-bar fanlight and panelled door. The building is listed, despite alterations, as a Georgian almshouse group of "remarkable scale and design", and it would be a big historical loss for it to deteriorate into ruins.

The decline of Cornwallis House has lessons for affordable housing. The rental income was insufficient to maintain the building, and it is possible that the thermal inefficiency of the flats led to such high fuel bills that the occupants could not have afforded more rent.

The Almshouse Trust was faced with a dilemma. A housing association, Bro Myrddin, came along, keen to build 12 homes on the school site, but did not want to take on the renovation of Cornwallis House and suggested that it be sold on the open market. In the event that no buyer came along – quite possible because the renovation cost would be greater than the market value – the trust would still be responsible for it.

Twelve new homes on the school site would leave little scope for gardens, either private or communal, and a decaying listed building immediately adjacent would not improve the living environment. Six to eight homes, with solar water heating and solar electricity generation, are more in keeping with the village environment and would be more comfortable and use less energy than the old flats.



*Flood risk map for Llanwrda School and Cornwallis House. Map from Natural Resources Wales. See Glossary for key.*

#### 9.3.4 Site C Allt Gilfach

**Possible larger scale development incorporating One Planet enterprises and Rural Exception affordable eco housing, with the goal of boosting the local economy through status as a demonstration project of regional significance, leading to work opportunities in education and training, as well as in land-based enterprises. Timescale: 6 – 10 years**

The difficulties of land acquisition mean that a sustainable neighbourhood, with a mix of smallholdings and low-impact homes with food-producing space, can be achieved in one location, as at Allt Gilfach, only if land is gifted or purchased with a grant, or is bought by people who have raised the capital by selling assets. The income yields from OPD are usually too small to allow for land-purchase mortgages. It is worth noting that the original nine households planning the Lamma eco-hamlet in Pembrokeshire proposed to fund their lease purchases by selling a house (3), letting a house and selling a boat (1), and entirely from savings (1). One proposed savings and help from family, another, loans from family. Only two households expected to take out a mortgage, to augment their savings which in one case reached six figures.

Although OPD homes can be built for £10,000 to £50,000, this does not automatically make them affordable housing:

- Self-builders use their own and unpaid volunteer labour, which if accounted for would raise the costs of homes.



- Self-builders often come with considerable financial resources and rarely appear to be driven by acute housing need.
- Wales' One Planet policy, which is not replicated in England, has encouraged OPD proponents to come to rural Wales from England. While this is a continuation of a trend over five decades, it has cultural implications which need to be considered in Welsh Government policies.

At Allt Gilfach, an important aim would be to cater for the local population.

- ❖ A community land trust could negotiate with Carmarthenshire County Council to acquire freehold about 30 acres of Allt Gilfach, for Rural Exception housing of ten dwellings with a mix of sizes advised by the council's housing needs section, on one acre. At least two low-impact designs would be incorporated so that differential performance could be monitored.
- ❖ The CLT could consider whether to partner with a housing association to deliver the project.
- ❖ If not partnering with a housing association, the CLT could consider applying to the People and Places Lottery Fund for a maximum grant (£500,000) towards building ten dwellings, and raise up to another £500,000 from a community share issue, with back-up funding from a special-interest lender like Triodos Bank.
- ❖ One acre could be allocated for allotments and orchard trees.
- ❖ Twenty-eight acres could be allocated to four One Planet enterprises, the homes to be self-built and occupiers to be sold 99-year leases (subject to leasehold sales still being allowed by the Welsh Government) with a covenant to cap sale prices. In the event of occupiers converting to freehold via leasehold enfranchisement legislation, it would probably not be possible to enforce the sale price cap.
- ❖ To keep homes affordable, community land trusts should be exempt from leasehold enfranchisement regulations and from any ban on leasehold sales.
- ❖ The CLT in this location could retain at least one acre freehold for future communal and educational amenities.

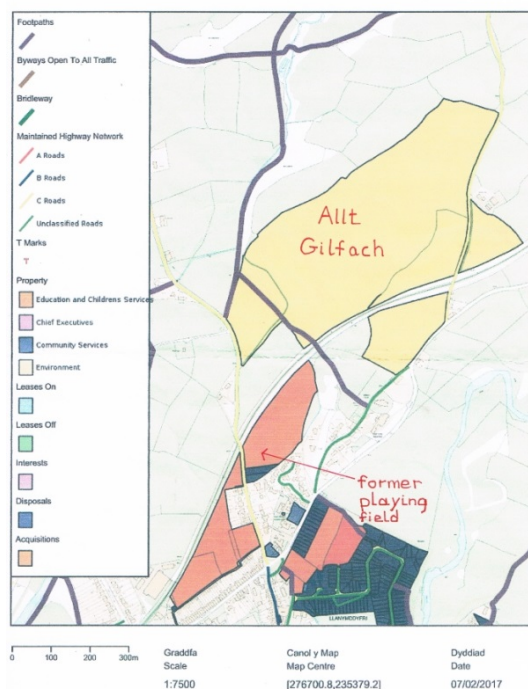
The lower, western portion of the site, about seven acres, is at risk of flooding from dam failure at the Llyn Brianne reservoir, and therefore it would be prudent to use this area for land-based enterprises, rather than for homes. A roadway from the existing field gate would have to be provided.



*Most of Allt Gilfach, on the north side of Llandovery, is not classed within a flood risk area, even for reservoir risk.*

*See Glossary for the key.*

Of those under consideration, this site has the biggest potential for a low-impact neighbourhood, but might never be available, and even if it could be acquired there would be a long time-lag before project completion.



*Land at Llandovery owned by Carmarthenshire County Council, showing Allt Gilfach, site C, and land opposite the closed comprehensive school (site D, below).*

### 9.3.5 Site D Playing Field at the Closed Pantycelyn Comprehensive School

**Possible two to four affordable eco homes adjoining the Cilycwm Road, with community farm/ food growing area adjacent. Timescale: 4 to 6 years**

This site, of about six acres, adjoins the northern edge of Llandovery's built-up area. Owned by Carmarthenshire County Council, the land is bounded on the northern side by the Heart of Wales railway and on the western side by the Cilycwm Road. Low-density housing lies to the south and to part of the eastern side.

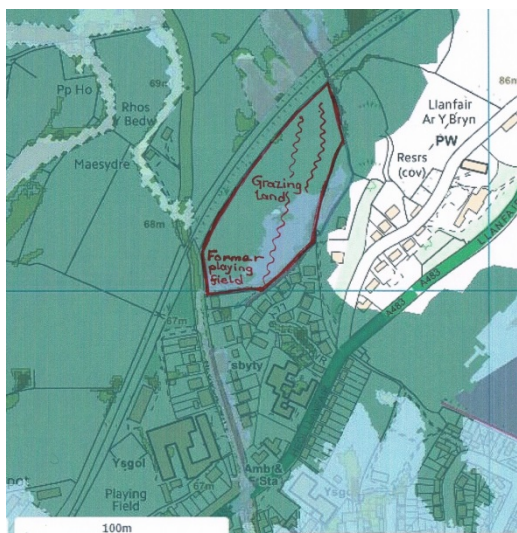
Llandovery's Roman fort lies within a third of a mile to the north east. Dyfed Archaeological Trust draws attention to a Roman road, Via Julia Montana, which may cross the field. Carmarthenshire County Council has already considered the possibility of housing on this field, but did not proceed with the idea because of archaeological concerns.

Felicity Sage of Dyfed Archaeology Trust gave the following information:

"This PRN (Primary Record Number) represents part of the route of RR623 as proposed by Margery, running from Castell Collen to Llandovery. RR623 itself continues on to Carmarthen. This route also forms part of the 'Via Julia Montana' suggested by Colt Hoare and Fenton, which was believed to continue west of Carmarthen to St. Davids. This proposed route generally follows the line of modern roads but, except for known stretches of Roman road, much of the route is conjectural. Following the accurate plotting of cropmarks from aerial photographs, a more accurate picture of the true course of the Roman road is available. While the actual route and the proposed route broadly follow the same course, the Roman road can now be traced in fields on either side of the proposed route or other modern roads. Also at SN4520; SN5020; SN5520; SN6025; SN6525; SN6020; SN6530; SN7535; SN7030; SN7530; SN8035; SN8040."

Study of historical sources suggests that the road may have passed across the northern extremity of the field, on its way to the historic Tonn farm. There is no unanimity about the route, though. Interpretations of aerial photographs suggest that a Roman road may bisect the field from north to south.





*Land owned by Carmarthenshire County Council, including a former playing field of the closed comprehensive school in Llandovery, lying between the Heart of Wales railway and the built-up area. The wavy lines show possible routes of Roman roads. The dark green shows risk of flooding should Llyn Brianne reservoir fail. See Glossary for the key.*

Flooding is a more modern risk to development of this site. The flood map from Natural Resources Wales shows that the majority of the field carries the risk of flooding should the dam at Llyn Brianne, 14 miles to the north north east, suffer a catastrophic failure. The remainder of the field, nearest to the built-up area, is marked as at risk -- albeit low -- of surface water flooding.

If this site is selected for further investigation, it would be advisable to liaise closely with Natural Resources Wales as well as with the Dyfed Archaeological Trust, with consequent cost implications. Natural Resources Wales charges £125 per hour for advice, and the Dyfed Archaeological Trust £60 per hour, in both cases plus VAT. The costs of an archaeological dig would be in addition.

# Section 10 Concise Business Plan

## 10.1 Basic Information

### **Business name**

Calon Cymru Network Community Interest Company

### **Owner(s) name**

The members of Calon Cymru Network own the company. The members are Martin Golder, Kenneth Pearce, Mark Waghorn (directors); John Cooper, Nicholas Dummer, David Edwards, Tony Little, Steven Packer, Glen Peters, James Shorten, David Thorpe (administration officer) and Amber Wheeler, Gill Wright. Pat Dodd Racher, the co-ordinator of this study, is also a member. Biographies are in Appendix 5.

### **Business address and postcode**

19 New Road, Llandeilo, Carmarthenshire, SA19 6DD

### **Business telephone number**

01550 721476

### **Business email address**

[info@caloncymru.org](mailto:info@caloncymru.org)

## 10.2 Plan Summary

Calon Cymru Network CIC , incorporated on October 23 2012, was formed to promote the creation of sustainable communities on a strategic scale, in the corridor of the Heart of Wales railway between Llanelli in Carmarthenshire and Knighton in Powys. Objectives include:

- Productive, regenerative land use
- Affordable land, housing and workplaces
- Balanced, viable and connected population
- Diverse, stable and durable local economies
- Community-scale horticulture
- A successful and convenient railway service
- A national, mixed forest for local industry and energy – the Fforest Calon Cymru

This project is to investigate the feasibility, form and cost of a sustainable neighbourhood at Llandovery, a small town on the railway in the upper Tywi valley of Carmarthenshire. In Llandovery 27% of residents are aged 65+ and only 18% are aged 25-44, consequences of retirees moving into a town with declining job opportunities especially in professional occupations and manufacturing.

### 10.3 Social and Economic Aims

- To provide sustainable energy-generating homes in accordance with the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.
- To provide homes with capped resale values in the interests of future affordability.
- To include 1- and 2-bedroomed homes, which are most in demand by applicants on the county council's waiting list.
- To include office space in every home.
- To include land for community food production within or adjacent to developments.
- To lobby for changes in national policy on land's fiscal status and on valuation for compulsory purchase.

### 10.4 The Proposition

Activating the project would mark Calon Cymru Network's transition from a research and lobbying organisation to sponsoring a new development which would express the organisation's objectives and serve as a demonstration for future projects.

### 10.5 The Market

The size of the market is indicated by

- The number of members in the One Planet Council's Facebook group, 1,233 on July 27 2017. The Facebook group is often approached by would-be One Planet Development residents, many of whom are looking for land on which to create land-based enterprises.
- The waiting list for social housing in the Llandovery area. At the end of March 2017, 277 applicants were waiting for housing.

A public meeting in Llandovery on April 20 2017 revealed concern about keeping homes affordable, enabling young people to remain in the area, and providing good jobs. There was less interest in One Planet Developments, which are not a familiar concept to the general public. In addition, some in the farming community are not yet inclined to regard OPDs and organic horticulture as 'legitimate' agriculture.

## 10.6 Future Residents – Who Are They?

- One Planet Development smallholders
- Local people on the county council housing waiting list, priced out of the housing market and ideally wanting to work in or near Llandovery

## 10.7 SWOT Analysis

### **Strengths**

#### **Dolau Fields**

Edge of town site with planning permission.  
Level walking distance of town amenities, bus stop and railway station.  
Access to highway already agreed.  
Flood protection works have been carried out.

#### **Llanwrda**

Site unlikely to flood.  
Site already contains a listed building with six flats.  
Part of listed building likely to be suitable for historical interpretation centre, the rest for craft workspace.  
Llanwrda is associated with several important persons in Welsh history including Owain Glyndŵr, Sir Rhys ap Thomas, and the benefactor Letitia Cornwallis.  
Space for allotments/orchard.  
Walking distance of railway station.  
On bus route.

#### **Overall**

Calon Cymru Network members are prepared to put in voluntary effort and to build partnerships. They are a group of professionals who are committed to sustainable rural regeneration.

### **Weaknesses**

#### **Dolau Fields**

Purchase price not negotiated.  
Risk of flooding if Llyn Brianne dam failed – probable insurance difficulties.  
Planning permission needs amending to group affordable homes together and to amend size to include in-demand 1-bed as well as 2-bed and 3-bed homes, feasibly four of each.  
Connection to antiquated, limited sewer.

#### **Llanwrda**

Charity owning the site lacks funds.  
Renovation of flats too costly for housing to be an economic option – alternative use would need to be agreed with conservation and planning departments.  
The caretaker is the sole current occupant of the flats building and would need to be rehoused.  
Access drive is single track.

#### **Overall**

Adequate funding is not in place and has to be raised.  
Difficulties of reconciling the different requirements of statutory consultees.

<b><u>Opportunities</u></b>	<b><u>Threats</u></b>
<p><b>Dolau Fields</b> Landowner keen for development to start. Promising demonstration site for energy-generating affordable live/work homes.</p> <p><b>Llanwrda</b> Heritage Lottery Fund a potential source of funds. Opportunity for community involvement and fundraising. Bringing more visitors to Llanwrda would result in additional custom for the shop and could give a new lease of life to the pub. Including Llanwrda in the Heart of Wales Line's tourism programme would benefit the railway and the village.</p> <p><b>Overall</b> Well-being of Future Generations (Wales) Act 2015 and Environment (Wales) Act 2016 require fundamental changes in lifestyles, to which low-impact sustainable neighbourhoods contribute.  Chance to develop partnership working, as the Well-being of Future Generations Act requires.</p>	<p><b>Dolau Fields</b> The local community land trust may not want to proceed, and if it does proceed, there may be a failure to achieve agreement with development partners.</p> <p><b>Llanwrda</b> Heritage Lottery Fund may reject application, and it would be difficult to find a comparable funder.</p> <p><b>Overall</b> 'It's all too difficult' – insufficient will to achieve change.  Potential failure to raise sufficient funds to conclude projects in optimal ways.</p>

## 10.8 Who would Work with Calon Cymru, and Why?

Probably the most important task facing Calon Cymru, after establishing a local community land trust and an umbrella community trust, is to develop partnerships with organisations and individuals who can work together to assist communities prepare for the future, in accordance with the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016. Calon Cymru Network's members come from a range of professional backgrounds and adopt an integrated approach to housing, work, transport and the environment, emphasising resource conservation, reductions in greenhouse gas emissions, growing the local green economy, shortening supply chains and encouraging co-operative enterprises. The

experience of diverse professionals working together should inform the process of collaborating with other organisations.

### **10.9 Prior Relevant Experience**

The Calon Cymru Network membership includes five architects, two planning consultants, two rail development officers, a writer on renewable energy, a sustainable farming consultant, a food and nutrition specialist, and an author on sustainability issues. Biographies are attached as Appendix 5.

Members have designed and constructed sustainable homes for clients, often well under £1,000 per square metre. These include Mark Waghorn Design's caravan footprint home for One Planet enterprises, and transitional live/ work home; Glen Peters' development of Ty Solar homes; and Nick Dummer's Morphut Ltd, with its timber structures.

### **10.10 Targets**

#### **One year:**

1. To found a local community land trust, with one trustee from Calon Cymru Network, one from Heart of Wales Line Development Company, and others from the Llandovery / Cilycwm / Llanwrda area.
2. To collaborate with the Heart of Wales Line Development Company in setting up an umbrella community land trust for the line corridor. Calon Cymru Network joined the National Community Land Trust Network in 2017 and in July applied to it under the advisory support programme for establishing new CLTs.
3. The community land trusts will decide their own priorities.
4. Calon Cymru Network will suggest to the local-area community land trust the construction of 12 low-cost but highly energy efficient homes at the Dolau Fields site, Llandovery. The site has planning permission, which would need to be amended. Price negotiations are not yet formally under way.
5. Calon Cymru Network will support the trustees of the Almshouse Charity of Letitia Cornwallis, if they so wish, in arranging the construction of six to eight energy-generating homes with community orchard/ vegetable garden on the primary school site, and also to gain permission to change the use of the listed building from residential to B1 (business) and D1 (including museums/galleries) and to secure funding to renovate it accordingly.

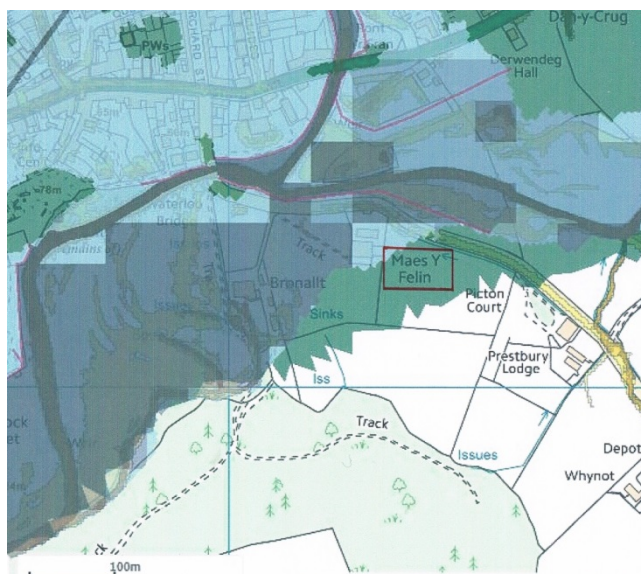
#### **Two to five years:**

6. To prepare proposals to put to Carmarthenshire County Council for a demonstration low-impact eco-hamlet with One Planet Development smallholdings, live/work homes and an education building on a portion of



council-owned farmland close to Llandovery. This land is not currently available.

7. To monitor the availability of other potential sites for energy self-sufficient, EPC A+-rated live/work homes, ideally with food production space. Possible sites include (a) opposite the former Ysgol Gyfun Pantycelyn, owned by Carmarthenshire County Council, and (b) Maes y Felin, privately owned. Both feature on the reservoir flood risk map, which is likely to increase the cost of insurance. The archaeological remains on the county council owned site are a further complication.



*Flood risk map for Maes y Felin, Llandovery. Part of this site could be suitable for low impact development in the future.*

*See the Glossary for the key.*

### **At the end of five – seven years:**

8. To have assisted the formation phase of the proposed local community land trust.
9. To have suggested, to this community land trust, development of at least 18 affordable eco-homes in total, at least six of which are live/ work homes; two food growing areas, light industrial business space and a historical interpretation centre.
10. Through the umbrella community land trust, to have helped the formation of at least two other local CLTs in the corridor area.
11. To have assisted One Planet Development applicants to secure suitable freehold land within five miles, and ideally within two miles, of the Heart of Wales railway.
12. To have campaigned successfully for changes in land taxation rules and compulsory purchase regulations, to lower the costs of land acquisition by public authorities and social enterprises, and to reduce the fiscal incentives which privilege land as a financial investment. This is a fine balancing act, because land ownership rights need to be sufficient to provide collateral for mortgages and loans.

# Section 11 Financial Projections

To prepare the financial projections, the possible sites were ranked in order of feasible starting date.

The first is Dolau Fields, Llandovery, which already has planning permission.

The scope of the project, and the large number of unknown factors, means that detailed financial projections are not yet possible, but approximate costs are proposed.

## 11.1 The First Year

To found an umbrella community land trust and a local community land trust.

At this stage the CLTs would not have their own premises.

**Table 8 Funding the first year**

<b>Costs</b>		<b>Income</b>	
Membership of National Community Land Trust Network	49	Funded privately as donation	49
Technical advice	500	Stage 1 National Community Land Trust Network grant	500
Preparation of essential documents such as Articles of Association at £20/hr, for 2 trusts	200	Stage 2 National Community Land Trust Network grant	1,000
Registrations	26		
Legal support	500		
Accountancy support	500		
Administration costs – resources e.g. telephone, computer, internet, stationery, stamps. Based in private home	1,000	Stage 3 National Community Land Trust Network grant	4,000
Administration costs – labour, 1 day a week for year 1 based on £25,000 a year. Could be on self-employed basis as part of a jobs portfolio	5,000	Crowd funding via platform	2,000
Expenses – travel, conference fees, etc	500	Voluntary professional support to administration role, as donated time, 50 hours at £20	1,000
Total	8,275		8,549
Carry forward			274



## 11.2 Balance Sheet Note

It is conventional to prepare a balance sheet showing assets and liabilities. As Calon Cymru Network itself will not be acquiring assets – that will depend on new CLTs and the decisions they make – it would be misleading to include a balance sheet here.

## 11.3 Funding Dolau Fields

### 11.3.1 Is it Affordable?

Future spending decisions about local, affordable eco-housing would be made by local land trusts supported by the umbrella trust, and thus not a matter for Calon Cymru Network as currently constituted. Even so, it is worth outlining how the Dolau Fields project might be funded.

For 12 homes (4x 1-bed, 4x 2-bed and 4x 3-bed) on 1 acre; orchard, vegetable growing area and landscaping on 1 acre:

**Table 9 Outline developments costs at Dolau Fields**

Land purchase 2 acres at £50,000/acre (notional)	100,000
Design	37,500
Planning permission process including local consultation	5,000
Valuation works and surveys	15,000
Ground works (about 5% of project costs)	75,000
Water connection	12,000
Sewer connection	15,000
Gas connection	12,000
Electricity connection	15,000
Telephone and broadband connection	2,000
House construction average £100,000 per house	1,200,000
Total	1,488,500

### 11.3.2 Social Housing Grant

The ball-park figure is thus about £1.5 million, on the basis of energy-efficient homes such as the Ty Solar.<sup>109</sup> The cost could be reduced to £1.165 million - £1.170 million by constructing recent designs for modular timber-framed homes, for example from Morphut and/or Mark Waghorn Design, for the 1-bedroom (each £50,000 to £60,000) and 2-bedroom (£60,000 to £70,000) designs.

Questions arising include:

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<sup>109</sup> As yet there is no 1-bedroom design for the Ty Solar.

- At the lower figure, would a housing association and/or the county council accept the dwellings as social housing? Or would they propose more expensive designs with which they are more familiar?
- If other organisations are reluctant to adopt the low-impact designs, how could a community land trust finance their construction?

The Welsh Government has a Social Housing Grant which could meet over 50% of the cost. At Llanidloes, for example, this grant met 58% of the £3 million cost of building 25 homes. Social Housing Grants require the full approval of the relevant local authority, and conditions may be imposed, such as a commitment for local people to provide 80% of the workforce, and for training placements to be provided.

### 11.3.3 Lower Costs with the New Designs

At £1.165 million, a notional 50% grant would leave £582,500 to be funded. Community shares could be issued, if the CLT were structured as a community benefit society (see 7.3), but what rate of return would be feasible?

**Table 10 Rental income at Dolau Fields based on Local Housing Allowance rates, August 2017**

Rents for 50 weeks/year	
1 bed x 4	14,588
2 bed x 4	18,410
3 bed x4	20,700
Total	53,698

Totals are for 50 weeks to allow for void periods, and it could be argued that 50 weeks is optimistic. Insurance, maintenance, monitoring and administration costs have to be deducted. Allowing £2,400, £9,000 and £5,000 respectively leaves £37,298.

This is equivalent to 6.4% of the sum raised, if that total is £582,500. Paying interest of 3.5% would amount to £20,388 annually. The balance of £16,910 annually would be used to fund further activity by the CLT, and over 30 years would amount to £507,300 at 2017 prices.

### 11.3.4 Commercial Mortgage Too Expensive

The figures are far less palatable if the development cost £1,488,500.

The amount to raise then would be £744,250, if grant aid at 50% were awarded. Interest at 3.5% would be £26,049 a year, leaving only £11,249 after insurance, maintenance, monitoring and administration costs. In addition, £744,250 could take a long time to raise.

The option of a commercial mortgage brings with the possibility of a much higher interest rate. Even at 5%, a £744,250 25-year repayment mortgage would cost

£4,352 a month, £52,224 a year – or 40% more than the total amount available. That is clearly a non-starter.

### 11.3.5 Smaller Development Funding Problems

If the lower-cost homes would be unacceptable to the local authority, the community land trust could consider applying for a smaller number of the lower-cost dwellings and partnering with a housing association for the remainder. Funding four 1-bed homes, and a third of the amenity land, for example, could cost some £508,500. With a Social Housing Grant of 50%, the amount to raise would be £254,250.

Annual income would be only £14,588, based on the 1-bedroom Local Housing Allowance rate for August 2017. While insurance and maintenance expenditure could come down more or less pro-rata, it would be difficult to trim the management amount much below £2,500 a year. If annual outgoings were £7,300, the balance would be £7,288, equivalent to 2.866% of £254,250 – not enough to pay an attractive rate of interest to investors, and not enough to put anything by for the future.

At Western Solar in Pembrokeshire, Glen Peters used income from his solar farm to fund the prototype Ty Solar, leading to a development of six homes at Glanrhyd near Cardigan (see 4.7.4). This funding possibility is receding because feed-in tariffs have been slashed. For solar electricity, feed-in tariff rates fell by about 90% between 2010 and 2017, and are paid for 20 years instead of 25.

Concerning solar panels on homes, one problem for developers is that they incur the costs of provision, while the occupants derive the benefits, although in money terms those benefits are no longer substantial. The magazine *Which?* estimated that the net benefit over 20 years would be £650 for a system with potential for 4kW, optimally positioned facing south and with a 30 degree tilt, on a dwelling with an EPC of at least D, and registered for the scheme between April 1 and June 30 2017.<sup>110</sup> *Which?* suggests that, from a financial point of view, it might be better to concentrate on insulation and energy-efficient appliances, and to invest in an ISA.

### 11.3.6 Co-housing Model

Another way of proceeding would be for a mutual home ownership society (MHOS) composed of the future residents to organise the building of the homes, as was the case with LILAC, Leeds (see 4.7.7). This model works best if intending residents are involved setting up the structure from the beginning, and could work at Dolau Fields if intending residents willing and able to take on the responsibility could be recruited, and also if the local authority accepted the model as a legitimate form of social housing. It is not certain if either of these conditions could be fulfilled.

Under this 'intermediate housing market' model, households should spend no more than 35% of net income on housing. They have to be able to buy shares in the

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<sup>110</sup> 'Feed-in Tariff Savings and Earnings' [www.which.co.uk/reviews/feed-in-tariffs/article/feed-in-tariffs/feed-in-tariff-savings-and-earnings](http://www.which.co.uk/reviews/feed-in-tariffs/article/feed-in-tariffs/feed-in-tariff-savings-and-earnings), accessed August 17 2017.

society, and also require steady incomes within specified ranges. At LILAC in 2013, minimum deposits ranged from £6,314 for a 1-bedroom home to £16,925 for a 4-bed one, and minimum net incomes were in the ranges £14,823-£20,315 for 1-beds to £39,388-£48,497 for 4-beds. Payments into the MHOS cover the communal amenities as well as individual family homes.

Paul Chatterton, one of LILAC's founders, has written about the funding challenges in his 2015 book *Low Impact Living: a field guide to ecological, affordable community building*. He writes (p.212):

“...projects like LILAC have cash flow issues in the early days, especially to get them over the first few hurdles like planning agreements, land purchases, architects' drawings and engineers' reports. Seedcorn funding from national or regional agencies can really help here. For example, as a result of what we did at LILAC, the UK government launched a multi-million-pound fund to get more community-led housing projects off the ground. Start-up capital from commercial lenders is also another route, and there are lots of social entrepreneurs and venture capitalists out there who are willing to lend money. However, interest rates can be prohibitively high. What the mutual and co-operative sector need specifically are its own sources of start-up capital and seedcorn funding. At the moment, further funding is also required to fill the gap in 'loan-value' ratios. Put simply, most projects can only borrow around 70% of the value of project costs. Most conventional developers fill this gap through either large cash reserves built up from development profit, or in the case of social housing, from government grants. Finance solutions need to be found for the co-operative and community-led sectors to plug this gap.”

Co-housing is potentially sustainable housing but is more appropriate to the intermediate housing market than to affordable social housing.

### 11.3.7 Suggested Action

The Welsh Government is keen to encourage co-operative housing,<sup>111</sup> but the housing waiting list for Llandovery area in 2017, household income data for Llandovery ward, and responses at the April public meeting, suggest that the primary need is for rented social housing, and therefore the most appropriate way for a community land trust to tackle this at Dolau Fields could be to seek a Social Housing Grant for a mix of 12 new-design low-impact homes, and to match fund through a community share issue, with interest payments set at about 3.5%.

## 11.4 Funding Llanwrda Primary School Site

Calon Cymru Network aims to assist the trustees of the Almshouse Charity of Letitia Cornwallis, if they so wish, in arranging the construction of six to eight energy-

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<sup>111</sup> 'New funding lays the foundations for Wales Co-operative Housing initiative', press release from the Welsh Government, April 26 2017.

generating homes with community orchard/ vegetable garden on the site of the former Llanwrda primary school, and also to gain permission to change the use of the adjacent listed building, Cornwallis House, from residential to B1 (business) and D1 (including museums/galleries) and to secure funding to renovate it accordingly.

Calon Cymru Network can only suggest options to the charity. The way forward depends on support from others, for example the local authority's conservation officer. Will change of use of the ruinous Cornwallis House be allowed? If so, will the Heritage Lottery Fund support renovation for employment and heritage purposes?

Western Solar, makers of the energy-generating Ty Solar, is interested in providing housing on the site of the closed school. Will the community be convinced to invest in both Cornwallis House – a necessary condition for lottery support – and in Ty Solar affordable housing?

These questions are as yet unanswerable, and mean that costing profiles are as yet too fluid to prepare. The position should be clearer by the end of 2017.

## 11.5 Taking the Plan Forward

During the preparation of this study, Calon Cymru Network and DevCo decided to submit a proposal to Welsh Government for financial support to expand work faster than was previously thought possible.

The proposal suggested that by December 2020 CCN could achieve:

- The umbrella community land trust, and at least two local trusts, formed and operating.
- Two projects totalling 20 homes, within a mile of railway stations, nearing completion.
- At least one added-value food enterprise operating, several market gardens and family-scale horticultural businesses supplying local markets, together with composting and recycling businesses.
- A number of new local woodland and forestry businesses up and running, creating nurseries and producing construction components, biochar and other woodfuels, furniture and craft items.
- 10% increase in tourism travel on the Heart of Wales railway.

This report marks the end of the scoping stage of CCN's work. It is now up to the members to decide how best to translate the organisation's objectives into regeneration projects which accord with the Well-being of Future Generations (Wales) Act, the Environment (Wales) Act and current and future supporting legislation.

# Appendix 1 Methodology

## Appendix 1.1 Public Meeting

Calon Cymru organised a public meeting to introduce the 'sustainable neighbourhood' project to the people of Llandovery. The meeting, on April 20 2017, was in the Function Room of the Castle Hotel, which the hotel management offered free of charge. Pre-publicity included posts on Calon Cymru's Facebook page and on Twitter, posters around Llandovery, and an article in The Post, the local free monthly magazine.

Invitations were mailed to the local MP and AM; to Dr Jane Davidson, director of the Institute for Sustainable Practice, Innovation and Resource Effectiveness and a former Welsh Government minister for Environment, Sustainability and Housing; town councillors; candidates in the forthcoming county council elections (May 4 2017); members of the Llandovery Partnership; National Farmers Union; Transition Tywi Trawsnewid; Dyfed Wildlife Trust; Natural Resources Wales; and the Community Land Advisory Service. Registered Friends of Calon Cymru were also invited by email.

More than 60 people attended. They did not include the MP, Jonathan Edwards, or the AM, Adam Price, both Plaid Cymru. (The meeting clashed with a special constituency meeting called to prepare for the unexpected General Election which was announced on April 18.) The 42 attendees who requested to be kept informed included Dr Davidson, six town councillors, three county council candidates (one for Llandovery ward and two for the adjacent Cilycwm ward), the proprietor of a large camping and caravan site at the edge of the town, and a chartered surveyor.

Calon Cymru was represented by patron Dr R Brinley Jones, president of University of Wales Trinity St David; architects Mark Waghorn and Martin Golder, sustainable farming consultant Tony Little, and administration officer David Thorpe. In addition, feasibility study coordinator Pat Dodd Racher gave a short presentation about the rationale for the project.

The video recording shows that the tenor of the meeting was positive overall. One of the county council candidates for Cilycwm suggested a possible site in Llanwrda. Younger members of the audience spoke in favour of new social housing. No one openly expressed worries that residents of One Planet dwellings might not fit in to the community, or that the Welsh language could suffer, both issues which were in evidence ten years earlier around Glandŵr in Pembrokeshire, when the Llammas eco-hamlet project was in its infancy. The lack of strong evidence of such a concern in Llandovery may be due to in-migration into the town, especially retirees from England; and to the rapid loss of public services including the comprehensive school

and three of four banks, making residents aware of the need for a larger population to support services.

The one serious jarring note stemmed from a communication failure. Carmarthenshire County Council owns 65 acres on the northern edge of the town, let to a tenant on a ten-year lease. A county council officer gave permission for Calon Cymru representatives to view the land, and requested another officer to tell the tenant. When the representatives visited, the tenant was taken aback and said he had no knowledge of the arrangement. This damaging breakdown was raised at the meeting, but the parties talked afterwards and progress was made. The incident highlighted the importance of communicating clearly, and of checking that tasks have been completed.

## Appendix 1.2 Interviews

### Appendix 1.2.1 Face-to-Face Interviews

**Emily Thomas**, asset management surveyor, and **Philip Davies**, valuation surveyor, Carmarthenshire County Council, March 15

**Lucy Golder**, strawbale house builder, March 31

**Antoni Norejko**, farmer, Maesygwandde Farm, Llandovery, April 7

**Glen Peters**, managing director of Western Solar, maker of the Ty Solar, May 12

**Jim Gaffney**, chair, Bishop's Castle Community Land Trust, July 11

**Peter Tompkinson** (chartered building surveyor), **Ian Lewis** and **Rhys Lewis**, landowners), Dolau Fields, Llandovery, July 18

**Handel Davies**, member of Carmarthenshire County Council for Llandovery, Aug. 3

**Arwel Davies**, member of Carmarthenshire County Council for Cilycwm, Aug. 3

**Trustees of Almshouse Charity of Letitia Cornwallis** (owners of 3.5 acres in Llanwrda), Aug. 3

**Andy McGill**, caretaker of Cornwallis House, Llanwrda, Aug. 3

**Tao Wimbush**, Lammas Low Impact Initiatives Ltd, Aug. 8

**Adam Price**, Assembly Member for Carmarthen East & Dinefwr, Aug. 18

**Felicity Sage**, Dyfed Archaeological Trust, Sept. 5

Information face-to-face, by telephone and /or email from Calon Cymru Network architects (Members and Friends) **Nick Dummer**, **Martin Golder**, **Lewys Jones**, **Ken Pearce**, **Mark Waghorn**; energy author and Calon Cymru Network administrator **David Thorpe**, Heart of Wales Line development officer **David Edwards**.

### Appendix 1.2.2 Telephone Interviews and Discussions

**National Community Land Trust Network**, March 27

**Jon Lee**, business development manager, Ecology Building Society, April 18

**Carwyn Jones**, Almshouse Charity of Letitia Cornwallis, Llanwrda, May 11

**Dave Palmer**, Wales Co-operative Centre, May 15

**Keith Davies**, affordable housing officer, Ceredigion County Council, May 17

**Sonia Sinanan**, operations manager, Ecological Land Co-operative, May 19



**Stephen Morgan**, strategic asset manager, Carmarthen County Council, June 27  
**Ian R Llewelyn**, forward planning manager, Carmarthen County Council, June 28  
**Dyfed Archaeological Trust**, June 28  
**James Yeandle**, building conservation officer, Carmarthen County Council, July 20

#### Appendix 1.2.3 Statements by Email

**Daniel Capstick**, mortgage manager, Ecology Building Society  
**Maria Carroll**, trustee, Almshouse Charity of Letitia Cornwallis  
**Handel Davies**, county councillor for Llandovery, Carmarthenshire County Council  
**Jude Dunn**, Lammas Low Impact Initiatives Ltd  
**David Edwards**, development officer, Heart of Wales Line  
**Jim Gaffney**, chair, Bishops Castle Community Land Trust  
**Catherine Harrington**, director, National Community Land Trust Network  
**Carl Harris**, chief of staff for Jonathan Edwards, MP for Carmarthen East & Dinefwr, and Adam Price, AM for Carmarthen East & Dinefwr  
**Anne Kennedy**, volunteer at the Rural Urban Synthesis Society  
**Nicola Lang**, Transition Homes CLT project co-ordinator  
**Tony Little**, sustainable farming consultant  
**Matthew Miller**, housing needs lead, Carmarthenshire County Council  
**Mark Ogden**, relationship manager, food farming and trade team, Triodos Bank  
**Steve Packer**, planning consultant  
**Dave Palmer**, co-operative housing project manager, Wales Co-operative Centre  
**Felicity Sage**, Dyfed Archaeological Trust  
**Carl Sargeant AM**, Welsh Government Cabinet Secretary for Communities and Children  
**Paul Taylor**, director, Cwm Harry Land Trust  
**Erica Thompson**, co-founder of Rhiw Las, a One Planet Development initiative in Carmarthenshire  
**Tao Wimbush**, Lammas Low Impact Initiatives Ltd  
**Gill Wright**, development officer, Heart of Wales Line

#### Appendix 1.2.4 Awaiting Formal Contributions

**Rhian Hughes**, Llandovery YFC  
**Aled Jones**, county executive officer, Brecon & Radnor, Farmers Union of Wales  
**Maria Norejko**, group secretary National Farmers' Union, Llandovery

### Appendix 1.3 Action Research

While the study was in progress, Calon Cymru continued to plan future work. The initial research prompted changes in emphasis. The original emphasis on the feasibility of an edge-of-settlement hamlet in accordance with One Planet principles shifted in response to land constraints, towards a sites-first approach, tailoring the proposed development to the space available. The continuing process of re-prioritising in response to findings is a feature of action research.



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## Appendix 2.2 Websites

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<https://charitybank.org> Charity Bank

<http://www.dolaufields.co.uk> website set up to market the Dolau Fields development site in Llandovery

<http://ecologicaland.coop> The Ecological Land Co-operative, based in Lewes, buys land to create smallholdings for people wanting to live and work on the land

[www.ecology.co.uk](http://www.ecology.co.uk) Ecology Building Society

<http://www.jeremyleggett.net/> for the concept of Appropriate Civilisation

<http://www.lilac.coop> The Low Impact Living Affordable Community in Leeds

[www.rocbf.co.uk](http://www.rocbf.co.uk) Robert Owen Community Banking Fund

[www.taiceredigion.org.uk](http://www.taiceredigion.org.uk) Tai Ceredigion Housing Association

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<http://gov.wales/docs/statistics/2015/151028-welsh-agricultural-statistics-2014-ency.pdf> Welsh Agricultural Statistics 2015

<http://www.thelivingvillagetrust.com> Commercial developments starting in Bishops Castle, Shropshire at The Wintles and Bells Court.

# Appendix 3 Energy Efficiency

## Appendix 3.1 Heating and Powering a Sustainable Neighbourhood

Energy expert David Thorpe writes:

The supply of renewable energy to homes and businesses, on land owned by a community land trust (CLT), can be considered separately as electricity and heat. Without knowing the exact location and making year-round measurements it is not possible to make capacity calculations based on generation source.

### Appendix 3.1.1 Renewable Electricity

Renewable electricity at this domestic scale is generated by wind, solar or hydro power. It may be possible to utilise wind and hydro electricity, depending on the site. However the only certainty is that solar electricity could be utilised. A combined wind and solar system would be ideal but still require some battery storage. A hydro system of sufficient size and reliability may not be feasible. Solar alone is unlikely to supply sufficient electricity year round without a grid connection, unless a lot (over a week's worth) of battery storage is provided for, which would be very expensive.

For grid connection the feed in tariffs (FITs) are currently as follows per kWh at the projected scale:

Standard solar photovoltaic		43p
Wind	0-50kW	8.33p
	50-100kW	4.92p
Hydro	0-100kW	7.80p

### Appendix 3.1.2 Solar Photovoltaic

Generation capacity depends upon the amount of roofspace available, times the amount of insolation, times the system efficiency. Most of this is currently unknown.

The recommendation would be to squeeze in as much capacity on the rooftops as possible, allowing also space for solar thermal (2.5–3 square metres of collector area per person).

Western Solar (see 4.7.4) has 14kW peak power on each of the detached houses at Glanrhyd, which yields around £900 income per house on FITs if the latest photovoltaic (PV) panels are used with efficiency ratings in the 14-15% range.

The payback may be up to 10 years however, and the use of FITs needs a grid-connected system. As the proposed neighbourhood may be close to an existing settlement, grid connection may be cheaply feasible.

Without grid-connection, on a private wire system, installation costs will be the same minus the cost of the grid connection (which can be expensive) plus battery storage.

In either case tenants can be charged a fair rate (say 13p per kWh - commercial rate is 14-16p) by the CLT or a separate not-for-profit ESCO (energy services company constituted as a community enterprise) set up by some of the tenants or CLT members.

Income to the CLT depends on usage, which depends partly on the energy intensity of any businesses conducted on site.

However a rough guess might be in the range of £1,200-£1,800 per family unit.

### Appendix 3.1.3 Renewable Heat

#### *Appendix 3.1.3.1 Solar Thermal and Biomass*

Installation of solar thermal is recommended for all properties as being cost effective, with either a heat store in each property or large central heat store with a heat main. Biomass combustion – either with stoves in each property with a back boiler, or a central CHP unit – would also feed into these heat stores, to guarantee year round hot water and space heating.

The size of the heat store required can be calculated from the formula: 150-300 litres (45-75 gallons) per person. For 4 people in one property this could be 500-1,000 litres (150-250 gallons).

All renewable thermal energy generated domestically is eligible for Domestic Renewable Heat Incentive (RHI) payments as follows:

Biomass boilers and stoves (per/kWh)	6.54p
Ground source heat pumps (per/kWh)	19.86p
Solar thermal (per/kWh)	20.06p

However changes are due to be made by December 1 2017.

It is possible that a not-for-profit ESCO run by the tenants could be set up to manage the collective supply and maintenance of renewable energy to the tenants, in which case non-domestic Renewable Heat Incentive (RHI) pence per kWh rates would apply to thermal energy supplied.

Small commercial biomass of less than 200 kW	2.71p
Solid biomass CHP systems	4.29p
Water/Ground-source heat pumps	9.09p

Without knowing the level of demand from the houses, which depends upon the construction style, the total cost and income cannot be estimated.

#### **Appendix 3.1.3.2 Anaerobic Digestion**

Anaerobic digestion processes organic farm waste to produce compost for sale or use on the land, and biogas. The biogas can be used to generate heat and power in a mini-CHP unit, or burnt in a simple adapted gas boiler, or used to fuel biogas-powered vehicles for zero carbon travel.

Anaerobic digestion could be considered for installation, but it is financially problematic at a small scale, with the level of RHI support in the future currently unknown. It is also presently unknown whether businesses being run by tenants would be able to generate or source the necessary and sufficient year-round feedstock from their own land-based enterprises – plus possibly purchasing some from farm neighbours – to make it viable. Therefore we are not considering it at present but leaving it open to potential future consideration.

### **Appendix 3.2 Code for Sustainable Homes**

The Code for Sustainable Homes, which was supposed to lead to higher standards of thermal efficiency, was scrapped in 2015. The Building Regulations and Energy Performance Certificates (EPCs) were supposed to compensate.

The expired Code for Sustainable Homes was in fact fairly undemanding. It comprised six levels for energy efficiency, and three levels for water efficiency. To reach the top level 6, a dwelling required zero net emissions of carbon dioxide, and water consumption of less than 80 litres per person per day. There were no minimum standards for pollution, ecology, health and well-being, or management aspects of construction.

### **Appendix 3.3 Energy Performance Certificates**

Energy Performance Certificates grade properties from A, the highest level, to G, the lowest. From April 1 2018 properties in England and Wales which are let for the first time, or re-let, must have a grade of E or better. From April 1 2020 all let properties must reach a minimum of grade E. Failure to comply carries a possible penalty of up to £4,000.

Property vendors also have to supply an Energy Performance Certificate, which is valid for 10 years.

The number of new dwellings in Wales with 'A' rated EPCs has risen from zero in 2008 to 153 in 2016, but that is only 1.92% of the total number of EPCs submitted for new homes. The majority of new dwellings, 77.89%, received a B grade. New homes do have higher grades on average than existing ones, which are subject to EPC grading when they are sold or let. Of the 75,564 issued in Wales in 2016, 20.49% were graded C, 36.01% D, and 20.04% E. Almost one in seven, 13.77%, were rated below E and would therefore be illegal from 2020.<sup>112</sup>

Calculation of an EPC score requires special software, which takes standardised data on property type, age, construction type, dimensions, room heating systems, water heating systems, insulation, windows and glazing, and lighting, and compiles a grade.

The E grade is a challenge for old solid-wall housing, and indeed there is concern that EPCs underestimate the thermal efficiency of solid walls, and new guidance from the UK and Wales governments is expected before April 2018. If a property is affected by changes, the owner will have to obtain a new EPC as an existing one cannot be annotated.<sup>113</sup>

The certificates are not 'bespoke', in that assessments are standardised and software calculates the grade according to the 'Reduced Data Standard Assessment Procedure', which uses pre-determined assumptions.

### Appendix 3.4 PassivHaus Standard

To what extent are higher construction costs counteracted by lower home energy costs?

Bere:architects of London N5 constructed two homes at Ebbw Vale, Gwent, intended as social housing, and in 2012 published a cost comparison between one of these, 2-bedroom detached PassivHaus called 'Lime House' and an equivalent dwelling constructed to minimum UK building energy performance regulations.

Both houses had internal floor area of 69.1 square metres. The PassivHaus had external wall construction of lime-rendered fibre board, timber frame with mineral wool, an air tightness membrane, sheep's wool in the service void, Fermacell and skim. The conventional house's external walls were ventilated brick cavity, timber frame with mineral wool, polythene vapour check, uninsulated service void, plasterboard and skim.

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<sup>112</sup> Tables NB1 and D1 from the Welsh Government, accessed June 8 2017.

<sup>113</sup> Information from the Residential Landlords Association, <https://www.rla.org.uk/landlord/guides/minimum-energy-efficiency-standards.shtml>, accessed June 13 2017.

The study, by Nick Newman of bere:architects and Richard Whidborne of e-Griffin Consultants Ltd,<sup>114</sup> concluded that the PassivHaus build cost of £97,223 compared to £84,197 for construction to the standards of 2010 building regulations. This is the construction cost only, without land, preliminary costs at 12% of the build cost and overheads and profit at 6%. These two latter categories added £18,200 for the PassivHaus calculations and £15,760 for the conventional build.

The higher spending for the PassivHaus was largely in external walls (£11,336 against £7,785), windows and external doors (£16,451 against £11,241), ventilation systems (£6,397 against £1,081) and ground floor construction (£6,233 against £3,209). The foundations of the PassivHaus were cheaper, £1,160 versus £3,501. The report authors suggest that if a large number of Passiv houses were to be built on one site, the cost per unit should fall.

The cost of living in the PassivHaus over time should be lower than in the conventional house, although variables such as climate and energy costs cannot be known with precision. Newman and Whidborne did calculations for 25 years assuming a mortgage for that time span of 85% of the total cost of the building works (excluding the land) at 3.9% APR, and energy bills. The difference between the PassivHaus and conventional house was not great, £1,293 over the 25 years, calculated as the Net Present Value.<sup>115</sup>

Research in Germany and Austria suggests that a PassivHaus of 149 square metres typically costs €15,000 more than a standard house. Energy saving based on heating oil at 65 cents a litre would be €715 a year, but electricity for the MVHR (mechanical ventilation with heat recovery) would add €65.<sup>116</sup> The net energy saving would take about 23 years to equal the additional up-front cost. A long-term study is not yet available because the first PassivHaus was constructed as recently as 1990, in Darmstadt, Germany.

Disregarding cost aspects, Passiv houses with even temperatures and constant ventilation should be comfortable to live in, and occupants may well feel the lower emissions are helping to mitigate climate change.

The UK's Building Research Establishment, an official certifier for PassivHaus buildings, requires these energy performance targets to be met:

- Specific heating demand 15kWh /square metre/ year
- Specific cooling demand 15kWh /square metre/ year

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<sup>114</sup> 'PassivHaus cost comparison in the context of UK regulation and prospective market incentives', for the Passiv Haus Institut, 2012.

<sup>115</sup> Net Present Value is reached by comparing negative cash flows (costs) and positive cash flows (benefits such as lower energy bills) over time, typically one year, and for each calculation the present value is determined by discounting its future value. The underlying premise is that money is worth more immediately – it can be invested – than at points in the future.

<sup>116</sup> 'Are Passive Houses cost-effective?', Passipedia, January 17 2015, [https://passipedia.org/basics/affordability/...in.../are\\_passive\\_houses\\_cost-effective](https://passipedia.org/basics/affordability/...in.../are_passive_houses_cost-effective)



- Specific heating load 10W/ square metre
- Specific primary energy demand 120 kWh/ square metre/ year
- Air changes per hour 0.6 @ n50

One of the problems in the UK is that the costs of building a PassivHaus and the energy savings of living in it generally accrue to different sets of people. The builder pays, the occupant benefits. For the current Conservative minority government in the UK, overwhelmed by the challenges of negotiating Brexit by March 2019, financial encouragement for PassivHaus standard homes is not a priority. This means that Passiv constructions are likely to remain niche undertakings.

### Appendix 3.5 Scottish Building Standards for Sustainability

There are four levels, from the basic compulsory Bronze through Silver and Gold to Platinum. The Tigh Grian homes in Clackmannanshire (see 4.7.10 above) are to the Gold standard, summarised below and taken from Technical Handbook Section 7. A dwelling at the gold level should “meet all the standards in Sections 1 – 6 that apply to the building for the bronze level and in addition the dwelling should comply with the gold level in each of the eight aspects below. The list shows the care with which designers must consider multiple aspects of sustainability.

**“Aspect Gold level 1:** Carbon dioxide emissions. Under the guidance to Standard 6.1, the carbon dioxide emissions (Dwelling Emission Rate, DER) is to be 27% lower than the Target Emission Rate (TER) set by the 2015 Standards. To establish this, the TER from SAP [Standard Assessment Procedure] 2012 calculation should be multiplied by 0.73, to give a revised figure which the DER should not exceed (this is equivalent to a 42.8% improvement on the 2010 Standards and a 60% improvement on the 2007 Standards). Where a building contains more than one dwelling (such as a block of flats or terrace of houses) the average carbon dioxide emissions for the proposed block or terrace (DER) may be compared to the average target CO<sub>2</sub> emissions (TER) for the ‘notional block or terrace’, similar to guidance in Section 6.

**“Aspect Gold level 2:** Energy for space heating. Maximum annual demand for useful energy for space heating should be:

- 30 kWh/m<sup>2</sup> for houses, or
- 20 kWh/m<sup>2</sup> for flats or maisonettes

To assess, the output from box no.99 of the SAP 2009 DER worksheet should be no more than the figures above.

**“Aspect Gold level 3:** Energy for water heating. **a. Renewables and heat recovery:** At least 50% of the dwelling or domestic building’s annual energy demand for water heating should be from: heat recovery and/or renewable sources with little or no associated fuel costs (e.g. solar thermal water heating and associated storage or

heat recovery from greywater) that are allocated for water heating. To assess, the annual energy demand for water heating in kWh multiplied by 0.5, should be no more than the contribution from specified equipment that uses renewable energy and/or heat recovery. A SAP spreadsheet is available for this calculation here: <http://www.bre.co.uk/sap2009/page.jsp?id=2294>. Where a building contains more than one dwelling (such as a block of flats or terrace of houses) the average annual energy demand for water heating may be met by installations of renewable sources and/or heat recovery for the block. This is similar to the buildings with multiple dwellings guidance in Section 6. **b. Water heating display:** A display showing the performance of the primary renewable source, such as a solar collector, should be mounted in easily accessible space, for instance alongside controls for heating equipment or near the bathroom/shower room door.

**“Aspect Gold level 4:** Water use efficiency. Technical Handbook - Domestic - Sustainability 11: Enhanced or additional products should be provided to encourage water efficiency as follows:

- 1 water butt (with a min. capacity of 200 litres) for outdoor use per dwelling. Dwellings without a garden or landscaped area, or if there is no access to rainwater collection (for example if there is no external rainwater pipe within the curtilage) are excluded, and
- 3 of the following 5 items:
  - water meter
  - WCs of average flush volume to be not more than 3.5 litres
  - wash hand basin taps of flow rates not more than 4 l/m and to kitchen or utility room sinks to be not more than 6 l/m
  - shower heads with maximum flow rate not more than 6 l/m
  - rainwater harvesting or greywater recycling system designed to provide water for toilet flushing.

The flow rates referred to align with performance bands in the Bathroom Manufacturers Association’s water efficient product labelling scheme (BMA scheme). Reference can be made to the performance bands within the BMA scheme or equivalent standards. Consideration should be given to the flow rates that combi-boilers (if fitted) need to activate their water heating function when specifying taps and shower heads with lower flow rates. When installing low volume flush WCs, the pipe diameter and gradient inter-relationship is critical in order that the new and any existing sections of the drain are self-cleansing.

**“Aspect Gold level 5:** Optimising Performance. **a. Quick start guide:** Provide as for Aspect Silver 5, plus: Direct ‘easy release’ adhesive labels on all key heating and ventilation equipment including (where fitted): trickle ventilators, extract fans, mechanical ventilation with heat recovery (MVHR), heating controls (programmers, Thermostatic Radiator Valves (TRVs)). Supplementary guidance on the content of

the direct equipment labels is in Annex B. **b. Resource use display:** Provide as for Aspect Silver 5, plus the real-time resource display indicates gas use (if gas is used for heating), displaying gas use at least at a daily period.

**“Aspect Gold level 6: Flexibility and adaptability**

**a. Home office:** Provide as for Aspect Silver 6.

**b. Mobility space:** Provide convenient secure mobility space to accommodate an electric wheelchair(s) and that could also be suitable for pram storage and the storage of a bicycle(s). The size is defined as follows:

- An electric wheelchair (or pram) storage space of: 0.8m x 1.1m on plan, minimum height of 1.8m. For dwellings of 4 apartments or more; or over 150m<sup>2</sup> ; space for two electric wheelchairs and
- A bicycle storage space of: 2m x 0.75m on plan, minimum height of 1.2m. For dwellings of 3 apartments or more; or over 150m<sup>2</sup> ; space for two bicycles: 1m x 1.5m. A single infant’s pram or pushchair should generally be able to use the mobility space as defined by either the cycle or wheelchair footprint. The space does not need to be able (Technical Handbook - Domestic - Sustainability 12) to store a wheelchair at the same time as a pram or bicycle (Diagram shows how the spaces can overlap. For diagram, see Annex D). The mobility space should have a socket outlet for recharging. Ideally, it should be adjacent to the accessible entrance. It should not be located in a protected enclosure and it should be outwith the minimum corridor width noted in Section 4, clear of any door way, door swing, stair landing or space identified for a future stairlift installation. The mobility space in the dwelling would be defined only by the wheelchair size(s) if either of the areas below are present, allowing the bicycle storage provision to be located outwith the dwelling:
  - A motor vehicle garage could be adequate as long as bicycle storage is outwith a 4.8m x 2.4m space for parking a single motor vehicle or
  - Communal bicycle storage that is secure (locked with resident only key access) and weather protected. This should be sized on the number of apartments in total or overall size of all dwellings served. The communal store should be at ground level or accessible by a ramp. If separate bicycle storage is allocated (garage or communal store), this does not need an electrical socket outlet. The storage provision for more than one bicycle could be split between a dwelling and a communal store.

c. General storage provision within a dwelling: Accessible storage of 1m<sup>3</sup> in volume per apartment. The storage space should be capable of being closed off with a door but does not need to be off each apartment. General storage is in addition to a wardrobe space or built-in wardrobe, or storage that is designated for the future provision of a shower. Both of these are identified in Section 3.

**“Aspect Gold level 7: Well-being and security**

a. Noise separation: Design performance levels for separating walls and separating floors associated with attached dwellings should be:

- Minimum airborne sound insulation: 60 dB DnT,w [weighted standardised level difference].
- Maximum impact sound transmission: 52 dB L'nT,w [weighted standardised impact sound pressure level] Performance levels for noise isolation for separating walls and separating floors should be verified by carrying out a sound test as indicated in the guidance to Section 5.

b. Noise between rooms: Design performance level for a minimum airborne sound insulation should be 45 dB Rw [weighted sound reduction]. This refers to all internal partitions in all dwellings and intermediate floors within houses and maisonettes excluding storage cupboards and should be substantiated by manufacturer's laboratory test certificates.

c. Enhanced natural lighting: Provide as Aspect Silver 7 plus the average daylight factor (average DF) for kitchens and living room/dining/study should be 1.5% and 2% respectively, using the simplified calculation below. The DF is a factor, expressed as a percentage, that will rise or fall depending on the relationship of glazed area and room dimensions. Here it is simplified as an average for a particular room. Matters pertaining to overshadowing, neighbouring buildings or orientation are removed from this calculation. Technical Handbook - Domestic - Sustainability 13 Average DF% =  $(52 \times M \times W) / A$  Where: A = The sum of the area of all room surfaces (ceiling, floor, walls, doors, windows and rooflights), in m<sup>2</sup>. M = Correction factor for dirt or ease of cleaning, consisting of:

- 1.0 for vertical glazing or
- 0.8 for sloping glazing or
- 0.7 for horizontal glazing.

W = Glazed area of windows or rooflights, taking account of framing, in m<sup>2</sup>. Measure glazed panes or measure window area including frames then multiply by:

- 0.9 for metal frames (patent glazing) or
- 0.8 for metal frames (large pane) or
- 0.7 for timber frames (large pane) or

- 0.6 for timber frames ('Georgian' pane). Assume the factors for PVC framed windows are equal to timber.

**d. Security:** Provide as Aspect Silver 7 plus:

- provide doorsets and windows which are tested and certified by a notified body as meeting a recognised standard for security or
- install a full intruder alarm system that complies with BS EN 50131 and PD6662 (wired system) or a Class VI alarm to BS 6799 (wire free system) that conforms to Association of Chief Police Officers (ACPO) guidelines.

**e. Outdoor space:** Provide private or communal outdoor space with room for occupants to sit outside. The outdoor space should be accessible only to occupants of designated houses or flats and not be occupied by car or cycle parking space, waste storage area, electricity substations or other ancillary features. It must comprise of at least one of the following:

- a private garden, patio, roof terrace or balcony (with the front open to air, or see Note 1 below) of an area no less than 1.5m<sup>2</sup> /apartment (minimum 3m<sup>2</sup> /home) with a minimum short dimension of 1.2m or
- a communal shared garden or courtyard that is:
  - of an area no less than 1.5m<sup>2</sup> /apartment (minimum 3m<sup>2</sup> /home) with a minimum short dimension of 2m
  - secure by, for example, resident only key access
  - secluded and fully enclosed with buildings themselves, walls, fencing or planting are all permitted possibilities to define the space. Generally issues of daylight, ventilation, safety and escape should meet the guidance of all the other mandatory standards. Access to these spaces should follow the guidance of Section 4. Technical Handbook - Domestic - Sustainability 14 Note 1: In a studio or single bedroom flat (i.e. a flat with 2 apartments or less) then the balcony could be a 'Juliet' type where the size could then be provided by a space immediately inside of an inward opening glazed door or door(s) and has a protective barrier externally. This space should not:
    - interfere with the defined space or access of an enhanced apartment
    - overlap with minimum furniture provision or associated activity spaces and
    - interfere with kitchen worktops, appliances or manoeuvring spaces.

**“Aspect Gold level 8: Material use and waste**

**a. Recycling of solid waste:** Provide as for Aspect Silver 8.

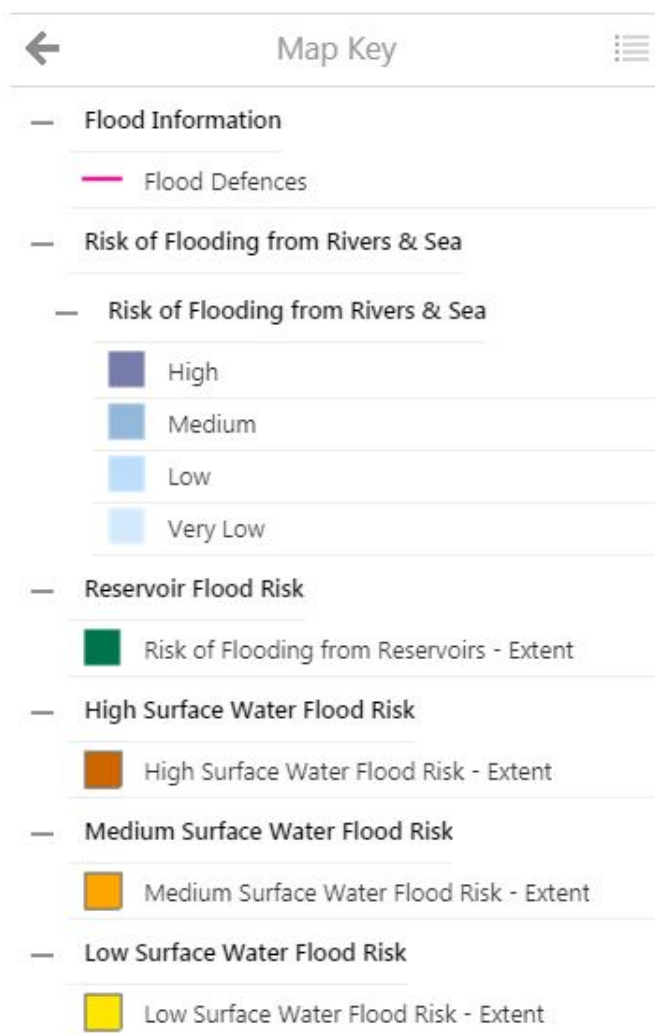
**b. Design for de-construction:** By consideration of waste minimisation arising from the built-form, one of the following should be adopted:

- Demonstrate that key principles of demountable construction detailing have been followed. This could be demonstrated by submitted drawings containing reference to guidance such as the Scottish Ecological Design Association's (SEDA) document on: 'Design and Detailing for Deconstruction'. A minimum of three of the high or medium priority items from the example constructions in the detailed section of this document should be demonstrated clearly or
- Provide a detailed plan for deconstruction of the building that follows a template such as that on page 21 of the SEDA document. This option provides opportunities to meet this level in this aspect for prefabricated, modularised or flexible internally partitioned constructions that use techniques that involve off-site manufacturing where the described assembly could be reversed for disassembly or
- An option only where a site is occupied and the warrant application is for demolition and construction. Provide a pre-demolition audit of existing buildings/structures on site. In this option for brownfield developments only, the audit should follow an established methodology such as the ICE [Institution of Civil Engineers] Demolition Protocol, referred to by the Waste and Resources Action Programme (WRAP) that:
  - produces a Bill of Quantities of the different materials in the building to be demolished
  - identifies the tonnages of material that can be recovered and
  - determines the percentage of materials recoverable

*Text in square brackets [ ] has been added for clarity, and is not in the original document.*

# Appendix 4 Glossary

## Key to flood maps, from Natural Resources Wales



**Agroforestry** Growing trees and agricultural and horticultural crops on the same piece of land. The idea is to supply mixed crops from trees and other plants, while protecting and conserving resources – environmental, economic, and human.

**BRE** Building Research Establishment

**CAT** Centre for Alternative Technology, Machynlleth

**CCN** Calon Cymru Network

**CHP** Combined heat and power

**CIC** Community Interest Company

**CLT** Community land trust

**CO<sub>2</sub>** Carbon dioxide

**CPI** Consumer prices index. Measure of prices change excluding several housing costs and calculated differently from the RPI (see below) so that it generally shows a lower level of price change.



*DECC* Department of Energy and Climate Change  
*DEFRA* Department for Environment, Food and Rural Affairs  
*DevCo* Heart of Wales Line Development Company  
*ESCO* Energy services company, constituted as a community enterprise  
*EU* European Union  
*FIT* Feed-in tariff for renewable electricity  
*FTE* Full time equivalent  
*HCA* Homes and Communities Agency  
*HMRC* Her Majesty's Revenue and Customs  
*kWh* Kilowatt-hour  
*LDP* Local Development Plan  
*LED* Light emitting diode, a form of low-energy light bulb  
*LILAC* The 'Low Impact Living Affordable Community' in Leeds  
*LPA* Local planning authority  
*MVHR* Mechanical ventilation with heat recovery  
*NPA* National Park Authority  
*One planet living* There is a difference between one planet living, and formal One Planet Development. The latter is a policy with rules (see below). One planet living is a broader concept underlying the Well-being of Future Generations (Wales) Act and the Environment (Wales) Act, and implying a progressive shift towards living within the resources of planet Earth. One planet living aspires to be zero carbon and zero waste, to care for land, water and wildlife, to use sustainable materials and transport, to encourage local supply chains, and to achieve healthy, happy populations.  
*OPD* One Planet Development, in accordance with the One Planet policy of the Welsh Government. specified in Technical Advice Note 6 and elsewhere. Rules are attached to planning permission for OPD in the open countryside.  
*PassivHaus* A high standard for designing energy efficient buildings.  
*Permaculture* a horticultural method aiming to create and retain self-sustaining productive ecosystems which are stable, resilient and diverse.  
*PSB* Public Services Board: there is one for each county in Wales.  
*PV* Photovoltaic, as in solar electric-generating cells  
*RHI* Renewable Heat Incentive, a system of subsidy for renewable heat.  
*RPI* Retail Prices Index  
*RTB* Rent to buy scheme  
*Rural Exception Site* Rural site not zoned for housing on which affordable homes for local people may be constructed  
*RUSS* Rural Urban Synthesis Society  
*SLNC* Saffron Lane Neighbourhood Council  
*TAN* Technical Advice Note  
*UNESCO* United Nations Educational, Scientific and Cultural Organisation

# Appendix 5 Biographies of Calon Cymru Network Members

**The Calon Cymru Network is a group of planners, architects and geographers, collaborating with specialists in housing, local economics, education, transport, energy, forestry, horticulture, law and community development.**

The Patron of the Calon Cymru Network is **Dr R Brinley Jones** CBE, FSA, MA, D.Phil, Hon DD, D.Lit, D.Univ (right). He is President of the University of Wales Trinity St. David and was President of the National Library of Wales for 12 years.



Here are brief biographies of the core team members:

**Dr Jon Atkinson**, EngD MSc MEng AIEMA BREEAM AP: Having led a number of teams of Sustainability and Energy Consultants and Environmental Assessors for built environment projects, working closely with M&E engineers to develop low carbon, sustainable building and community solutions, he is now Director of Aletho Consulting Ltd, providing sustainability, BREEAM and energy/carbon guidance and strategic support to private developers, architects and public sector clients. He has devised strategic sustainability and energy solutions for projects as diverse as the Northampton University Waterside Re-location, North West Bicester Eco-town, Exeter Skypark, RAF Uxbridge regeneration scheme, Umm Ramool in Dubai and the Club Aliga tourist project by Lake Balaton in Hungary.



**John Cooper:** Scientist, philanthropist, cycling enthusiast and advocate of local sustainable food provision and social housing.



**Nick Dummer**, Dip.Arch RIBA, Architect: After graduation Nick worked as an architect in local authorities in England and South Wales before moving to Shropshire in 2003 to set up a small practice with his landscape architect wife. He also designs and builds “tiny houses” and zero-carbon timber cabins, as Morphut Ltd. His approach to both designing and building, and indeed things in general, might be summarised as “Take care, think it through and make it



work". Living in a village on the Heart of Wales Line he is particularly anxious about social and economic decline in the corridor.

**Martin Golder**, AADipl. RIBA Architect, Designer and Teacher: Martin is an architect and civic designer but most of his career has been spent working in professional teams with planners, geographers and engineers etc. For 5 years he was a Studio Tutor at the University of Westminster while running a small practice after which most of his career has been devoted to planning and development in Europe, North America and several third world countries. Now living in Powys he is semi-retired, taking on only selected, sustainability-based consultancy projects. He co-founded the CCN in 2009 and his main interest is the need to plan for global uncertainties, including climate change and resource depletion.



**Tony Little**, Sustainable Farming Consultant: Tony has 18 years' experience working in organic and sustainable agriculture in the UK and internationally. He was a key figure at Organic Centre Wales for nearly 15 years and has experience in organic crop and livestock production in the UK and abroad. Based near Aberystwyth, he provides advisory services and acts as agent for applications for RDP schemes, including Glastir and Sustainable Production Grants. He delivers Farming Connect funded services in partnership with ADAS. Tony is a member of IOTA, Organic Training and Advice, and has excellent links with organic producers, food businesses, certifiers and policy makers. He also works part-time on an organic sheep farm near Tregaron which he is diversifying into horticulture.



**Steve Packer**, Dip. TP, MRTPI Town Planner: Steve's career has been entirely in local government, first in London Boroughs and then in Powys. He retired in 2012 but continues to work as a freelance consultant. He has worked at Westminster City Council, Architecture and Planning Dept. Civic Design and Special Projects Section. London Borough of Greenwich Planning Dept, Policy and Town Centres Team; Radnorshire District Council, Architecture and Planning Dept., as Deputy Chief Planning Officer; Freelance Planning Consultant, Radnorshire District Council and Powys County Council, Planning Dept, Development Control / Development Management Sections, Senior Planning Officer and Specialist Services Manager. His main interest currently is in campaigning for local authorities to implement One Planet policies in Mid Wales.



**Ken Pearce**, Dip.Arch RIBA, Architect, Builder and Smallholder: Ken worked as an architect in local government and private practice before going solo as a designer / builder in London and a furniture designer / maker in France for several years. On his return to the UK in 1986 he resumed his architectural career as a partner in a

small practice operating mainly in the Marches and Wales. His main expertise is in low-energy, sustainable construction, particularly in relation to affordable housing, Ken has served as Chairman of the Herefordshire Society of Chartered Architects and as well as running a busy practice he finds time to work on his smallholding near Hereford.

**Dr Glen Peters**, social housing and renewable energy entrepreneur: CEO of Western Solar Ltd. Born in Allahabad in India, he spent his childhood living in a railway colony near Calcutta (now Kolkata). Formerly an engineer and accountant, he founded Project Rhosygilwen, a Pembrokeshire-based rural arts-regeneration venture. He then built the first solar farm in Wales and used the income to design and build Ty Solar, a self-sufficient house made of local materials, and Pentre Solar, a small solar village. He is interested in sustainable, social, affordable housing.



**Dr. Patricia Dodd Racher**, BA M.Ed PhD, Geographer and Researcher: Patricia graduated in geography and social anthropology from the London School of Economics, has a management diploma, an M.Ed and a PhD. Since 1988 she has worked as research analyst, consultant and writer. She has published two books on food security. One of her main concerns is the irreconcilable conflict between continuous economic growth and the finite resources of the planet. Her related interests include low-impact development for rural areas.



**David Thorpe**, BA (Art and Environment): Administrator for CCN. Co-founder/Patron of the One Planet Council and author of *The One Planet Life* (Routledge 2014). He is a consultant on sustainability issues, lecturers in One Planet Living at the School of Architecture in the University of Wales Trinity St David. The author of many books on green energy, passive solar architecture and energy efficiency, he is also an environmental journalist. More info at [davidthorpe.info](http://davidthorpe.info)



**Mark Waghorn**, MA Dip.Arch ARB, Architect: Mark is an architect with fifteen years post-qualification experience. He studied architecture at Cambridge University and the University of North London. He worked for seven years at DGA Architects in London, qualifying in 2002 and becoming Associate in 2003. During this time he gained experience in private, commercial and public sectors, with projects ranging in scale from residential refurbishments to urban design. He moved to Wales in 2011, inspired by the Welsh Government's stated objective of becoming a One Planet nation within a generation. He now has his own practice in Llandeilo, which specialises in rural



sustainable design. As a director of CCN, he is working with colleagues to make this vision a reality in the Heart of Wales corridor and to inspire others to follow.

**Amber Wheeler**, BA MSc Sustainable Food Consultant: Since receiving her BA (Hons) Human Sciences from Oxford University Amber has been active as a volunteer, employee, academic and consultant in trying to improve the food system so that it is more sustainable. She defines 'sustainable' in the holistic sense i.e. being better for health, food security, environment, culture, justice and resilience. With an M.Sc in Public Health Nutrition she is researching a PhD in how the food system in Wales could help improve diet in relation to fruit and vegetable consumption. Her enduring interest is how we can plan and achieve a food system that delivers on all aspects of sustainability. With colleagues she has been working upon a Food Manifesto for Wales.

## Appendix 6 Further Information

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